THE LANCET.

VOL. I.] LONDON, SATURDAY, FEBRUARY 24, 1844. [1843-44.

HOSPITAL FOR THE CURE OF DEFORMITIES.

COURSE OF LECTURES ON THE DEFORMITIES OF THE HUMAN FRAME.

BY

W. J. LITTLE, M.D.

Assistant-Physician to the London Hospital; Physician to the Orthopædic Institution.

Delivered at the Orthopædic Institution, Bloomsbury-square, in 1843.

LECTURE XV.

Congenital Talipes Varus. Characters and Morbid Anatomy. Treatment in the Infant. Treatment of Adult T. Varus.

THE number of instances of club-foot probably equals that of all the other congenital distortions added together.

The frequency of this particular distortion corroborates the opinion of its origin from a lesion of the nervous system, as it corresponds with the greater frequency of non-congenital spastic and paralytic deformity of the ankle than other non-congenital distortions. I have, in a former lecture, attributed the greater frequency of deranged action of the muscles of the foot and ankle to the greater tendency to disease of the parts of the nervous centres from which arise the nerves distributed to the parts most distant from these centres.

T. varus may exist in various grades of severity; it may be so slight that it appears to be merely an unnatural increase of the propensity of children to turn the feet inwardly. It may affect one or both feet. In the majority of cases the deformity presents the appearance of this model (fig. 30). It consists of a threefold alteration of position of the foot in relation to the leg,—elevation of heel, adduction, or inversion of the toes, and a rotation of the foot, analogous to supination in the upper extremity. The patient treads on the outer margin of the foot, principally on the external edge of the metatarsal bone of the little toe; and, if the deformity be unrelieved, it increases as the child grows.

This increase is, in part, attributable to the improper manner in which the weight of the body is borne by the extremity. The perpendicular axis of the limb, instead of passing through the arch of the foot and the sole, falls to the outside of the little toe, so that in the act of progression the toes gradually incline more inwardly, whilst the dorsum of the foot tends towards the ground. (See fig. 30, p. 681.) The preponderating action of the adductor muscles also augments this deformity. Ultimately, the dorsum only is applied to the ground. Occasionally the deformity presents a higher grade, even at the moment of birth, the toes being not merely inverted to a greater degree, but so much elevated by the action of the anterior tibial and extensor proprius pollicis muscles, that the inner margin of the foot is nearly applied to the tibia, as in these models (fig. 31). Whether the deformity reach the severest grade at birth, or subsequently attain it through the operation of the causes I have mentioned, it may, during adolescence and adult age, present the most frightful deformity, as in these models (fig. 32). Locomotion is, in these cases, wholly effected on the dorsum, or, more accurately, on the anterior extremity of the os calcis, and the proper superior surface of the os cuboides. The mode of progression is very unsightly, one foot being lifted over the other, to prevent the toes of one foot striking against those of the opposite member. The parts of the foot applied to the ground suffer much from the friction and pressure to which they are subjected in walking; a globular callosity forms over the os cuboides and adjacent bones, which often equals in size a small orange. When it attains this magnitude the patient, if young, and therefore less experienced in locomotion, unless assisted by appropriate shoes, experiences difficulty in standing still, although he may be enabled to walk and run quickly. Except when seated his condition becomes one of perpetual motion, the comparatively small extent of surface on which the body rests occasions difficulty in maintaining its balance in the erect posture, and the sufferer continu-

(Fig. 31.)

Most severe grade of Infantile Congenital T. Varus.

(Fig. 32.)

Most severe grade of Adult T. Varus.

ally moves to avoid falling. It often happens that the highest grade of deformity occasions less difficulty and pain in locomotion than the slighter grade; in this the weight of the body may be wholly thrown on the little toe. The extent of surface applied to the ground in these cases being small, it becomes inflamed and excoriated; besides which a greater sensation of weakness is experienced, owing to the constant tendency to increase of inversion, whereas in the highest grade (as in fig. 32), the inversion having attained its maximum, a firmer bearing is obtained. The act of locomotion becomes, with increasing age, more laborious. I have known many persons thus affected who have walked twenty or thirty miles in a day, but it usually happens that so great a soreness results from one day's exercise that the individual is compelled to rest for several days afterwards. The majority of persons thus afflicted pursue sedentary occupations, and when poor seldom quit the noisome lanes and alleys of the metropolis. Occasionally the callosity on the dorsum ulcerates or sloughs, the tarsal bones become exposed, affected with necrosis, so that relief has been often sought in amputation. Within the last three years amputation has been performed in this metropolis, for removal of T. varus, in cases in which ulceration did not exist. I shall be enabled to prove to you that no case of T. varus ought to be amputated unless such an amount of *disease* of the tarsal bones should exist as would render amputation of a well-formed foot necessary. One foot only may be affected.

T. varus is attended with inferior development of the entire member; this is more striking in the parts below the knee. Sometimes this deficiency is not perceptible at birth, but becomes evident as the age of the individual increases. Its extent at birth, as well as the severity of the deformity, depend, in my opinion, upon the earliness of the period of intra-uterine existence at which the deformity arises. As in extra-uterine life spasm and paralysis partially arrest growth and induce *atrophy*, so in the fœtus these phenomena result; and it follows that the later the period at which the fœtus becomes affected the less *arrêt de developpement* the members generally will present. You will readily understand that, as in childhood and adolescence, a greater or less intensity of muscular contraction will produce a corresponding severity of deformity, so in the uterus the severity of the cause will, in a great measure, determine the grade of deformity. But it should be further remarked, that in proportion to the earliness of the period of infancy and adolescence at which a deformity arises, the more readily the bones and ligaments yield to the displacing power of the muscles. From analogy, therefore, it may be inferred that, as at an early period of embryonic existence the

bones and ligaments possess little capability of resisting displacement, the earlier the muscles are excited to abnormal activity the more severe will be the deformity, and the arrest of development of the bones and other structures of the affected members. In considering this explanation of the intra-uterine origin of club-foot, you will remember the fact of the muscles being earlier developed in utero than the passive tissues, the bones, ligaments, and cartilages. The muscles are developed between the third and fourth month of gestation, which corresponds with the existence of T. varus in four-month fœtuses, several of which I have anatomically examined. In corroboration of this view of the origin of T. varus I may also mention the fact of the earlier development of the flexor and adductor than of the extensor and abductor muscles. This fact will tend to explain the greater frequency of T. varus than T. valgus. Congenital talipes is sometimes accompanied with deformity of the knee; this may be slight, and for a time elude observation, or it may consist of slight inversion (as in fig. 31), the patella (often very small) being situated too near the outer margin of the limb, the biceps femoris slightly contracted, and the flexion of the knee impaired as regards its direction. In other cases more severe deformity of the knees, sometimes complicated with derangement of the motions of the hip, exists. Complete flexion of these articulations may be present; the case then presents the greatest resemblance to spastic non-congenital universal contractures (see lecture ix). Other deformities may coexist.

Morbid Anatomy.—The greater part of that which has been written on this subject appears to have been derived from investigations of the feet of individuals who had long availed themselves of the imperfect use of their limbs, and in which the deformity had been aggravated from friction and pressure. The anatomy of T. varus can only, with accuracy, be determined from the inspection of infantile examples of the deformity, as well as adult ones. Hypothesis supplied the place of observation; for, as some pathologists assumed that the deformity depended on malformation of the bones, they concluded that very extensive changes in form and structure of these must exist. I am satisfied, from perusal of several professed descriptions of the anatomy of a club-foot, that the author's ideas were derived from inspection of the living foot and not from dissection. The first great step in the elucidation of the morbid anatomy of talipes varus was the demonstration by Scarpa, that of the several bones of the foot the astragalus is the least displaced. It had been previously asserted, among other misstatements, that the astragalus was luxated.

The accuracy of Scarpa's opinion has been disputed by succeeding writers, but the result of my observations of more than thirty specimens of varus, from subjects of different ages, is, that I can confirm the opinion of Scarpa, and add that I have examined no preparation of varus in which each of the three facets of this bone, which articulate with the tibia and fibula, has not been in partial contact with the appropriate surface of these bones. The confirmation of Scarpa's opinion, and the results of my own observation, have been of the utmost importance in enabling me to determine, from pathological anatomy, the propriety of undertaking the treatment of the highest grade of T. varus.

The empirical tendency of art to advance from the treatment of the simple to the more complicated deformities would alone have confirmed my previous suppositions, and have demonstrated the possibility of rectifying the position of the foot in cases of adult varus, such as are represented in these models (fig. 32). You will understand the importance of determining the anatomical condition of the astragalus when you remember that this is the only bone of the tarsus which enters into the composition of the ankle-joint.

It may not be uninstructive, in concluding the pathology of varus, to show you that after the fluctuations that have taken place in the opinions respecting club-foot, the most approved opinion is in entire accordance with that of Hippocrates. In his book "De Articulis," speaking of non-congenital and congenital deformities of the foot, it is stated,—"Modus mulitationis non unus est, sed plures. Plerumque non quod ex tota sede sua elapsus est articulus, sed vi aliqua detinetur, eo habitu assuevit, pes varus efficitur."

An examination of this drawing (fig. 33)

Fig. 33.

Anatomical Arrangement in T. Varus.

will illustrate the position of the tarsal bones in complete varus. The os calcis is drawn upwards; the tibial articular facets of the astragalus and its round head are exposed upon the dorsum of the foot; but the scaphoid, cuboid, cuneiform, and metatarsal bones, are not merely drawn towards the sole, but also inwards and upwards, so that the innermost point of the navicular bone touches the internal malleolus, and has an articular surface formed on it, occasioned by constant friction. The superior or external surface of the os cuboides is somewhat separated from that of the os calcis; whereas the plantar surfaces of these two bones are turned towards each other, leaving a triangular space between them externally. The course of the tendons of the muscles situated upon the front of the leg is consequently much altered. Those of the tibialis anticus, extensor proprius pollicis, and ext. long. digitorum, more particularly the first of these, are deflected so much internally, after passing over the ankle-joint, as to serve by their action to increase the deformity in the living subject.

Such are the essential anatomical characters of talipes varus; according to the severity of the deformity either of the characters before mentioned may be more or less distinctly traced. I have purposely omitted all the non-essential phenomena met with in the examination of these feet, such as osseous vegetations, and evidence of former caries of the surface of those bones which have suffered from pressure against the earth; and some other still greater malpositions of the tarsal bones, likewise the occasional result of external pressure and injury from walking, or from wearing improperly adapted mechanical instruments.

An attentive study of the anatomy of talipes varus will further confirm my opinion of its origin, that the muscles are the parts primarily involved, and that the displacement of the bones is entirely secondary. If the bones were simply arrested in their development, or if they had been injured by external causes, and the contraction of muscles were but secondary, the bones would not bear so precise a relation to the shortening of the respective muscles inserted into them. If you examine the preparations from which the drawing is taken, you will observe that the shortening of the gastrocnemii corresponds to the elevation of the heel, whilst the adductors and remaining muscles on the posterior and internal surfaces of the ankle have drawn the navicular, cuboid, cuneiform, and metatarsal bones internally, upwards and posteriorly, away from the astragalus, exposing its round head. In fact, the conjoint powerful action of the gastrocnemii and the other muscles I have enumerated, have bent the foot at the summit of the tarsal arch, drawn its component parts asunder, whilst the connecting ligaments were yet soft.

Treatment.—You are now prepared to understand the principles and the details of the treatment of the deformity. It is not simply an empirical process of straightening that which is deformed, but an interesting subject of study, in which you bring to bear the etiological and pathological facts with which you are acquainted. You know that your antagonists are the gastrocnemii and the adductors. (In many cases the tissues of the sole are involved.) You have to determine whether you will remove these obstacles to straightening by tenotomy or by mechanical extension. I need scarcely mention that, as a result of the malposition, the ligaments and fasciæ are variously affected. Some are shorter, others longer than natural.

I should, in the first place, state that the length of time required to effect a cure is of less consequence in children than in adults. The circumstance of children not comprehending the object of the treatment, nor the necessity of the pain or irksomeness to which they are subjected, combined with the susceptibility to the injurious effects of continued disturbance of rest peculiar to their age, and their liability, when the general health is disturbed, to be affected by any of the prevailing infantile epidemics, are the reasons why children cannot, on the whole, bear as unremitted an application of mechanical instruments as is occasionally necessary in adults; it is therefore fortunate that, with reference to the degree of resistance to be overcome, the facility of effecting a cure is so much greater at this period.

There are many cases in which the deformity may be nearly or entirely removed for the moment by pressure with the hands; but others exist in which the tension of the contracted muscles is so great, particularly of the gastrocnemii, that although the adduction and rotation of the foot may, as long as the pressure of the hand is continued, be more or less completely overcome, yet the greater part of the elevation of the heel remains. The former afford greater prospect of success by the sole application of mechanical means of cure; but in many of the latter a cure of the deformity will not be obtained without the division of the Achilles or other tendons, although the treatment may be commenced within a few weeks after birth, and be very perseveringly continued throughout the whole period of infancy.

Experience alone can enable you to determine with any degree of certainty whether the cure of talipes in an infant is obtainable by the application of mechanical means: but in the formation of an opinion you will be guided by the extent to which the deformity can be removed by the hand, and the nature of the resistance offered by the muscles. If the active spasmodic state of the muscles still appear to exist, accompanied with considerable structural shortening, not-

withstanding the foot may for a moment be reducible to its natural form with the hand, you should be less sanguine of a permanent cure by means of instruments. But I would recommend, for several reasons, that in every case of talipes, the treatment of which can be commenced previously to the age of six months, the cure should be attempted by the application of mechanical means, provided your efforts will be seconded by the parent. Many cases are curable without operation. Interruptions in the treatment are, from various causes, more liable to occur during the earliest months of existence. If the treatment be mechanical, a temporary suspension of the extending power exercised by the apparatus is not fatal to the ultimate success of the plan; but if, after the performance of the operation at so early a period, a necessity arises for discontinuing the wearing of the extending apparatus, a loss of time occurs, during which the divided tendon firmly reunites, the cure being as distant as prior to the operation, and a repetition consequently required. When the operation is perfectly successful, and the foot entirely reduced to a proper form by the application of mechanical contrivances for a few days or weeks, it still is necessary to retain the foot in its newly-acquired position by means of apparatus until the child arrives at an age to walk; for, in consequence of the tendency to contraction occurring in the medium which unites the divided tendon, the deformity would probably be reproduced were this precautionary measure neglected.

Another reason for considering the propriety of treating infantile cases without division of tendons is the objection which, on general grounds, may be made to the performance of any operation, however simple, during the earliest months of existence.

The most favourable period for the division of tendons in infantile cases of talipes, is a few months before the time when the child may be expected to make the first attempts to walk—about the age of six or eight months, until which time, in cases of talipes varus, such mechanical apparatus should be used as tend to turn the toes outwardly, reducing the deformity to the condition of talipes equinus; in the latter affection, whether primary or so reduced, depression of the heel may be judiciously attempted, which, if not wholly successful, will at least prevent any increase of the deformity. If, by means of the operation and subsequent application of mechanical instruments, the reduction of the foot to a proper form be effected at the period when the child evinces a disposition to walk, he will rapidly acquire strength and activity. The act of walking will then, to a great extent, guard against the recurrence of the deformity, and the use of any mechanical apparatus may, within a short time, be discontinued. But the cure of infantile talipes varus cannot be so completely effected, if, during the earliest months of life, the application of mechanical apparatus, calculated to maintain the toes in a straight line with the leg, by overcoming the twisting inwards and rotation of the foot, be neglected. The development of the internal malleolus and the neighbouring parts having been impeded by the adduction of the foot, or the child having walked, by which the external parts of the tarsus have suffered from attrition, also add to the difficulties.

The plan which, in private practice, I pursue in infants under the age of six months affected with T. varus is simple, and which, with proper directions, can be partly entrusted to parents or nurses. It consists of the application of a smooth and narrow roller-bandage around the foot and leg, from the extremity of the toes to the knee, interposing along the inner margin and sole of the foot, and the posterior and internal part of the leg, a quantity of cotton wadding, to protect those parts from pressure; the limb should then be firmly and evenly bandaged in a tin splint,—your entire attention being first directed to the removal of the inward tendency of the toes, and the reduction of the T. varus to the condition of T. equinus. The limb, when properly secured in this splint, is exposed to pressure in the direction the toes would maintain if held outwards with the hands in the position of T. equinus, the inside of the metatarso-phalangeal articulation of the great toe and inside of the superior extremity of the tibia being the fixed points, towards which the bandage presses the ankle and tarsus, tending to overcome the unnatural curve presented by the deformed foot,

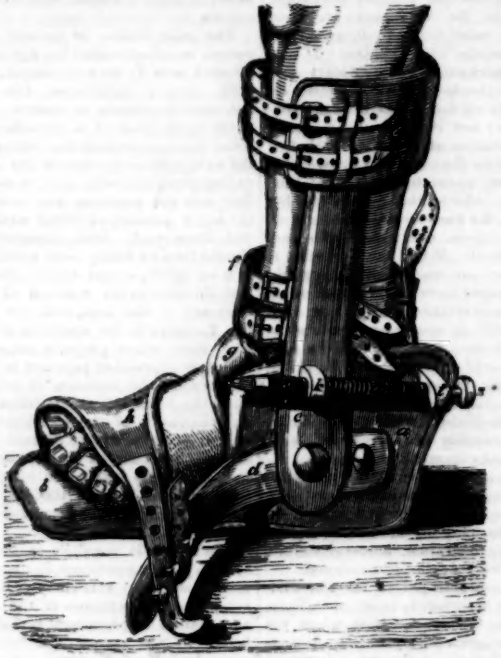
Much care is requisite in the application of the splint, as pressure in an improper direction might at this early period of the development of the tissues of the foot produce a permanent displacement or flattening of the bones of the tarsus. I have witnessed several cases of T. varus which had been for years under ill-directed mechanical treatment, and in which there existed secondary alterations of form, which I could only attribute to pressure improperly exercised at an early period. The back of the splint should be applied to the posterior part of the leg and foot, and the raised part should extend along the inside of the leg and inner margin of the foot. Should the splint have slipped around the leg it must be immediately reapplied. The whole apparatus should also be removed on every occasion that the bandages become soiled by the infant, and immediately reapplied; for if the foot were permitted to remain a few hours without the restraint of the splint, more advantage would during that period be lost than had been gained during its application for treble the length of time.

As soon as the contraction of the adductor muscles of the foot and the inward inclina-

nation of the toes is observed to be considerably diminished, and particularly if, on the removal of the apparatus, the toes are not drawn inwardly, the splint may be advantageously exchanged for another, the foot-part of which is bent more upwards. This should be applied in the same manner as the previous one, by which means you may be enabled to maintain a constant stretching of the contracted gastrocnemii. Should these yield, you may resort to the employment of splints, the foot-parts of which are bent to a still greater degree, until perfect flexion of the ankle is obtained.

On the infant attaining the age of six months, or if the treatment be postponed until this period, a more efficient instrument (see fig. 34) may be advantageously substi-

Fig. 34.*



Apparatus for Relief of Talipes Varus.

tuted. But, as in the application of splints the rectification of the position of the foot must be attempted gradually, the foot-piece *a b*, fig. 34, must be screwed to such an angle with the perpendicular spring *c*, as to correspond with the obtuseness of the angle which the foot forms with the leg.

One of the more prominent causes of failure in the treatment of club-foot is the injudicious haste with which the rectification of the vicious position is frequently attempted, and the occurrence of abrasions of cuticle and displacement of the instruments. The abrasion results from excessive pressure and friction occasioned by the endeavours of the child to disengage the limb.

*"Success in the employment of any particular instrument is as much the result of the manner of application as of its peculiar efficiency. A few simple directions for the application of that represented in fig. 34 may not be inappropriate. A thick woollen stocking, or an elastic cotton bandage, should first be applied; if the foot is not well encased in adipose tissue, a portion of cotton wadding may be laid over the instep. The ankle band *f*, detached from the strap *i*, should be buckled around the leg above the malleoli; holding the shoe-part of the instrument in the left hand, you should with the right place the heel in the shoe, and secure it by means of the straps *g g* firmly against the inside *a* (fig. 34). The heel should be prevented from rising by fastening the strap *i* to the back part of the ankle-band *f*; and the spring *c*, by means of the circular

Whether the cure be conducted with or without an operation, it is of the utmost consequence to apply the necessary apparatus in such a manner that the repose of the child may not be disturbed, or uneasiness and constant fretfulness induced, which might interfere with its appetite and amusements. The welfare of a child so much depends on the necessary quantity of sleep being obtained, that you should almost imperceptibly increase the action of the apparatus; and although restlessness may at first be produced, you will generally succeed in accustoming the child to its application. The cure of a talipes would be dearly purchased at the sacrifice of general health; but the careful progress with the extension of the contracted parts, the removal of the apparatus once or twice daily, will uninterruptedly advance the restoration of the foot, provided it be curable without operation.

I have one more observation to make respecting the determination of treating infantile varus by mechanical means, or by tenotomy. You will frequently notice, that in this institution I recommend the operation in very young infants, sometimes so early as the age of six or eight weeks. The circumstances that in these cases determine me in the selection of the operative in preference to the simply mechanical method are, either the extreme severity of the deformity, in which experience demonstrates the absolute necessity of the operation, or that, from the inability of parents to devote the requisite attention to the treatment, I am aware that whatever time we may employ for the purpose, whatever pains we may take, the result will be unfavourable. Even with the aid of the operation, the children of parents more favourably situated cannot be restored without their zealous co-operation; how unfavourably placed, then, are our efforts to assist the poorer objects who apply here. The same difficulty attends the treatment, among the very poor, of all diseases, the relief of which cannot be effected by the *vis medicatrix naturæ*. In the treatment of talipes the abnormal efforts of nature tend continually to frustrate the best directed efforts.

Many cases, then, present themselves, in which, among the richer classes of society, you may satisfactorily recommend mechanical means, but which, among the very poor, you will treat by tenotomy, as a means of expediting the recovery. It is unnecessary to discuss the relative merits of the two methods. Tenotomy is not appropriate to cases remediable by instruments. If you are in doubt, try the mechanical plan, but if, when the age of walking has arrived, the patient is not sufficiently restored to permit the free application of the foot to the ground, and the performance of the natural movements, tenotomy should be no longer postponed, as the act of the walking on the foot in an improper position, for a single week, will certainly aggravate the deformity. This remark applies as well to walking, with the aid of "irons," into which instrument-makers place children in order to enable them to support themselves. If the effect of the "irons" is not to cause the child to tread quite evenly, they are worse than useless. They serve only to hide the increasing deformity.

When, at any age, the division of tendons is resolved upon, it is necessary to consider the parts to be severed. As you are aware that club-foot essentially depends on unnatural shortening of the muscles of the calf and the anterior and posterior tibial muscles, you might *à priori* conclude that section of each of these parts is indispensable. If the operation were resorted to simply as a means of removing the presumed spastic state of the muscles, if its *modus operandi* were dynamic, it would follow that every muscle involved should be severed. But the operation is often requisite as a simple means of elongating a contracted cord; its effect is mechanical. It is difficult to determine in every case of T. varus whether spastic action of muscles, or mere structural shortening of their fibre maintains the deformity. You may, therefore, on *principle*, determine to divide the largest of

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band *e*, formed of thin metal and properly padded, be applied to the outer side of the leg. This will effect a change in the ankle-joint similar to that ensuing in the wrist when the hand is pronated. The inner margin of the foot being then directed to the ground, in opposition to the natural tendency of T. varus, the toes should be drawn as far outwardly as can be effected without pain, by means of the padded strap *h* attached to the spring *d*; lastly, the ankle should be bent, by turning the screw *l*, with a key constructed for the purpose, as far as the tense tendo Achillis will permit. As the screw *l* acts through the female screw *k*, which is fixed as a rotatory rivet upon the spring *c*, and *t* (fig. 34) is merely a stud through which the smooth part of the screw existing between the termination of the thread and the knob *s* can move freely forward and backward, a certain degree of motion of the ankle-joint is allowed in the act of walking, tending to increase its flexion, whilst the position of the screw *l* prevents the heel becoming elevated. If the spring *c* act in directing the inner margin of the foot to the ground too powerfully and painfully, a piece of tape, or a small strap, may be attached to the inside of the band *e*, which is applied around the leg below the knee, and fastened to a buckle on the inside of the foot. This will moderate the action of the spring, which can be increased in the daytime and diminished during the hours appropriated to rest."—(Extract from Dr. Little's Treatise on Club-foot and Analogous Distortions.)

the tendons, that which by its anatomical arrangement offers the largest share of resistance,—the tendo Achillis, for example,—and complete the cure by mechanical elongation of remaining tissues. But if, in cases of average severity, you perceive that the anterior and posterior tibial are very tense, the fibres of the patient robust, and unlikely to yield to mechanical treatment, you will determine to divide these also. In numerous instances the flexor muscles of the toes and the plantar fascia are conjointly affected, and you consequently effect division of those within your reach, the flexor longus pollicis, plantar fascia, or even the abductor pollicis. After every section many tissues remain for elongation by mechanical treatment. The same mechanical apparatus is required subsequently as previously to operation.

The operative treatment of severe T. varus in youths and adults may be advantageously divided into two stages. Owing to the slowness of restoration in extreme cases (as at fig. 32), the treatment often occupying six months, it is proper to divide, in the first instance, the tendons and other structures which adduct the foot, and devote attention to its eversion so as to reduce it to the condition of T. equinus, and subsequently to sever the tendo Achillis and depress the heel. Your object will be, in the first instance, to reduce a complicated deformity to a more simple form. A common splint, bandaged on the outer side of the limb, often proves the best mechanism for this purpose. The depression of the internal edge of the foot can be better effected by the action of the perpendicular spring (fig. 34) than by any other contrivance with which I am acquainted. By this means the most severe congenital T. varus, in patients even of thirty years of age, may be entirely removed. The after-development of muscles and acquisition of strength of limb may be facilitated by the general measures which I have so often enumerated whilst speaking of other deformities.

PHYSIOLOGY AND PATHOLOGY OF THE URINE.

BY

GEORGE E. DAY, M.A., L.M., Cantab., Physician to the Finsbury Dispensary, &c.

(Continued from vol. ii., 1842-3, p. 669.)

IN my last communication I stated that I should commence this paper with a brief notice of the results deduced from my own experiments. The whole of the daily urine of a man aged thirty, of good constitution, and living very temperately, was collected, and a portion of it was analysed upon six alternate days in March, and upon four alternate days in June. The average quantity of urine excreted in twenty-four hours was, during the continuance of these experiments, about thirty-eight ounces, the maximum being forty-three and the minimum thirty-four ounces.

The mean specific gravity was 1022.5. The mean results of the analyses are expressed in the following table:—*

Water	961.00
Solid residue	39.00
Urea	16.60
Uric acid	.61
Fixed salts	9.72
Organic matter and loss	12.07

In all cases it is the best plan to analyse a portion of the mixed urine of twenty-four hours; as, however, there are many difficulties, both in private and dispensary practice, in preserving the urine in this manner, I usually content myself with a specimen of the urine first passed upon waking, as being less likely to be influenced by disturbing causes than that passed during the day.

Urea.—According to Becquerel the quantity of urea passed in twenty-four hours amounts in man to about two hundred and seventy grains, and in woman to about two hundred and forty grains.

Macgregor states the average quantity at 428.5 grains, Christison at 510 grains, and Brande† at 1320 grains. In eight experiments made upon himself, Lehmann found that (while living on his ordinary diet) the maximum quantity of urea was 602 grains, the minimum 427 grains, and the average 500 grains. The following observations of Lecanu are of sufficient value to find a place here, although some of them need farther confirmation. From a long and careful series of analyses he came to the conclusions,—

1. That the quantity of urea voided in twenty-four hours is very different in different individuals. One man, for instance, passed 509.3 grains, and another only 185.3 grains daily.

2. That in the same individual the quantity of urea voided in twenty-four hours does not vary considerably.

Thus, in A it only varied from 365.8 to 483.4 grains, in twelve experiments.

B, it only varied from 373.4 to 481.9 grains, in twelve experiments.

C, it only varied from 357.4 to 462.6 grains, in seven experiments.

* Not having a *very fine* balance I cannot positively vouch for the accuracy of the second decimal place; I believe, however, that the figures in the table are, in every case, correct.

† Brande's lectures on Organic Chemistry, reported in the "Medical Times." The quantity is so incredible that we conclude that it must be an error of printing, probably for 320.

D, it only varied from 419.2 to 466.8 grains, in four experiments.

E, it only varied from 426.6 to 501.0 grains, in six experiments.

3. That when the aqueous portion of the urine is increased the quantity of urea which is excreted does not undergo a corresponding change.

4. That no certain inferences can be drawn from the specific gravity, regarding the quantity of urea.

For purposes of clinical observation we usually see Prout's method of ascertaining the proportion of urea adopted in this country:—"For *practical* purposes an *excess* of urea may be shown by putting a little of the urine in a watch-glass, and adding to it carefully about an equal quantity of pure nitric acid, in such a manner that the acid shall subside to the bottom of the glass. The mixture must be kept as cool as possible, and if, under these circumstances, a crystallised deposit be found, an excess of urea is indicated. The degree of excess may be inferred near enough for *practical* purposes by the length of time which elapses before crystallisation takes place, which may be from a few minutes to two or three hours."—(Prout on the Nature and Treatment of Stomach and Urinary Diseases; Introduction, p. 73, note.)

Rayer objects to Prout's method, on the grounds that the results are uncertain, and I have myself occasionally observed that when similar quantities of urine and nitric acid have been placed in similar watch-glasses, and subjected to similar influences, there has been a discrepancy in the circumstances attending the crystallisation.

Rayer's method is to place a couple of drops of urine on a piece of flat glass, and add to them a minute drop of nitric acid. Upon placing the slip of glass under the microscope the quantity of crystals of nitrate of urea, and the rapidity with which they are formed, will indicate, with tolerable correctness to the practised eye, the circumstance of there being either an excess or a diminution in the proportion of the urea.

Several theories have recently been advanced with regard to the *state* in which urea exists in the urine. We shall briefly notice a few of those which, from the high character of their promulgators, are the most deserving of our attention. Persoz considers that almost all the substances found in the urine are the products of oxidation (as, for instance, lactic, uric, oxalic, and other acids), and that the functions of the kidney are to bring about the oxidation of the substances contained in the blood. Whether this oxidation is dependent upon the saturated state of the oxygenised blood that passes through the renal arteries, or whether it is dependent upon the decomposition of water, Persoz cannot decide; he is, however, inclined to adopt the latter hypothesis, on account of the presence of ammonia, whose constitution must remain a mystery if we reject the idea of its hydrogen being generated by the decomposition of water.

"The day will probably soon arrive," he observes, "when we shall be able to demonstrate the presence of compounds of cyanogen in the blood, and the oxygenation of the cyanogen will lead to the formation of urea, for a cyanate in contact with a watery solution of an ammoniacal salt leads directly to the formation of this substance." He contends that it is only the constituents of the urea, not the urea itself, that exist ready formed in the urine, and that urea itself is formed from these constituents, by the action of certain influences, especially that of heat acting upon some of the principles of this animal fluid.

In confirmation of this view he adduces the following experiments: Upon exposing urine to a degree of cold varying from 0° to 10° Fah. it freezes from without inwards, leaving, however, in the centre, an uncrystallisable syrup, upon which nitric acid produces no apparent effect. If, however, we carefully warm this syrup, taking care not to increase the heat so as to cause any concentration, we can really obtain crystals of nitrate of urea.

Morrin has published a paper upon this subject in the 61st volume of the "Annales de Chimie et de Physique." Without entering into a detail of the experiments upon which his views are founded, it is sufficient for our purpose to state that he came to the following conclusions:—First, that urea does not exist as a free substance in the urine; and, secondly, that we find it combined with chlorine, or muriatic acid, in the proportion of six or eight atoms of urea with one of chlorine; thirdly, that, on treating urine with oxalic acid, we obtain a salt whose base is not urea, but a substance which is composed of one atom of nitrogen and two of hydrogen, and to which Morrin applies the name urile;* fourthly, that it is this urile, and not urea, which exists in the urine, and with which the chlorine is combined; fifthly, that when acted upon by nitric acid urea is produced. Morrin was led to form these views regarding the combination of urile with chlorine by observing that coarse, unpurified urea (that, namely, which is obtained by treating a concentrated syrup of urine with alcohol, and allowing it to crystalise) throws down, with an aqueous solution of nitrate of silver, a chloride which exceeds in quantity the fixed chlorides of the urine. The excess of chloride of silver could not be attributed to the presence

* The urile of Morrin is neither more or less than amidogen. It must not be confounded with the uril or urilic acid (C_8 N_2 O_4) of Woehler and Liebig.

of muriate of ammonia in the substance experimented with, because, upon the addition of sulphate of copper, and of caustic potash, to the aqueous solution, the green tint was permanent, and no ammoniacal odour was evolved, contrary to what would have occurred if any muriate of ammonia had been present in the solution of urea.

Much of his evidence rests upon quantitative analyses, which it is unnecessary for us here to revert to. The next researches upon this subject, worthy of notice, are those of Cap and Henry. The conclusions at which they arrived (see the original essay in vol. 25 of the "Journal de Pharmacie") were,—

First. That the urea does not exist in a free state in the urine.

Secondly. That it acts the part of a base, and is found in the human species principally in combination with lactic acid; in the ruminants in combination with hippuric acid; and in serpents and birds with uric acid, or at least with a peculiar acid (the urile of Liebig) which is the radical of uric acid.

Thirdly. That the natural lactate of urea obtained from the human urine is identical with the same salt prepared artificially.

The process by which they obtained the lactate of urea (as described in their second essay, published in June, 1841), is here given somewhat in detail, in order to enable any of my readers, who take an interest in the question, to follow their method with exactness.

They evaporated fresh human urine to about five-sixths of its bulk at a temperature not exceeding 248° Fah., and obtained, on cooling, a bright, brown, and very acid liquor, which was carefully filtered, in order to deprive it of the deposit formed during concentration. The liquid was then evaporated at a gentle heat to the consistence of a syrup, and subsequently placed *in vacuo* over strong sulphuric acid until it became nearly dry. The residue was placed in a stoppered glass bottle, and there was added to it a mixture of two parts of sulphuric ether and one part of rectified alcohol, in the proportion of ten or twelve times the weight of the mixture to the residue. The bottle was frequently shaken, and after a few days the liquid (which was of an amber colour) was poured off. Upon adding to this liquid a slight excess of carbonate of lime, of zinc, or of baryta, or bicarbonate of potash, and shaking the bottle, effervescence occurs, and there are produced lactate and phosphate of lime, zinc, baryta, or potash, by the saturation of the free lactic and phosphoric acids which are contained in the urine. Upon again filtering the liquid ethereal portion, and exposing it to a gentle heat, there were produced very fine crystals of lactate of urea, perfectly similar to those artificially prepared. These crystals appeared as long, transparent, hexagonal prisms, had a sharpish taste, and were volatile at a moderate heat. They were very soluble in water, alcohol, or alcoholised ether, but less so in sulphuric ether. They exhibited very powerful hygrometric qualities (in this respect differing much from urea), dissolving entirely when exposed to the air, and forming a bright-coloured solution, which, when gently heated, again furnished crystals.

In order to ascertain the state of combination of the lactic acid with the urea the following experiments were made; the crystals of the supposed lactate of urea were divided into three equal portions, and marked A, B, C.

A. These crystals were dissolved in pure water, and slightly treated with hydrated oxide of zinc. The mixture was evaporated to dryness, and treated with sulphuric ether, which dissolved the urea, and subsequently yielded it in crystals, which were not hygrometric; the residue, on being treated with hot distilled water, filtered and evaporated, yielded white, acicular, styptic crystals of lactate of zinc.

B. Somewhat similarly acted upon by a solution of baryta.

C. From this portion, upon the addition of a salt of lime, a soluble salt was obtained, which crystallised on cooling, and possessed all the ordinary characters of lactate of lime.

Cap and Henry themselves confess that the lactate of urea is not very easily obtained, and they assign three causes for this difficulty. They consider it due, first, to the excess of lactic acid in the urine; second, to the great solubility of the lactate of urea, and the high degree of concentration required to obtain it in a crystalline form; and, thirdly, to the extreme volatility of the salt, which requires that the concentration should be carried on with great care and attention.

From one thousand parts of urea, they obtained eighteen parts of lactate of urea, which corresponds very nearly to nine parts of urea.*

Whether the urea in the human urine does really exist as a lactate is still undecided. Lecanu, Gregory, Pelouze, Garrod, and other chemists, have carefully followed the steps laid down by Cap and Henry, but have not arrived at similar conclusions. Lecanu, to whom we are indebted for several interesting essays upon subjects connected with the urine, has not only endeavoured to point out the incorrectness of the views of Cap and Henry, but has gone further, and investigated the theories propounded by Persoz and Morrin. For the purpose of testing the accuracy of Persoz's views, he exposed the

* Lactate of urea consists of 49.61 per cent. of urea, and 50.39 per cent. of lactic acid.

mixed urine of several individuals in perfect health, to a cold of about 14° Fah., for the space of from eighteen to twenty-four hours. The frozen mass was broken up, and placed in a glass funnel, over a piece of cotton, which was placed there in order to catch any of the urine that might remain fluid; upon expressing this fluid from the cotton, and adding nitric acid, pearly lamellar crystals of nitrate of urea were immediately formed. Similarly, upon the addition of oxalic acid, the granular appearance of oxalate of urea was very soon seen. From these, and numerous similar experiments; from the fact that in numerous cases a deposit of nitrate of urea is immediately produced upon the addition of an equal quantity of nitric acid to urine in a watch-glass; and, lastly, from the fact of the nitrate of urea being formed in exactly the same manner, whether the urine is evaporated by the air-pump and sulphuric acid, or by heat, we must be led to agree with Lecanu, in considering that there must have been some fallacy in Persoz's experiments.

The results of another series of experiments lead us to conclusions that the existence of *urile*, as described by Morrin, cannot be admitted, since the substance obtained in accordance with his directions, contains muriate of ammonia, whose presence at once explains both its appearance during distillation, and the precipitated chloride, which is obtained upon the addition of nitrate of silver. Moreover, urea may be obtained without having recourse to any reagents capable of decomposing the pretended chloride of urile, and converting it into urea. The views of Woehler, Dumas, and Berzelius, with regard to the purely *chemical nature* of urea, will be referred to in our section upon the chemistry of that substance. We shall notice Liebig's views on the subject, when speaking of uric acid, from which he supposes it to be derived by a purely chemical process.

Uric Acid.—The quantity of uric acid excreted by different individuals, seems to vary greatly. Becquerel states that, on an average, men pass about 7.6 grains, and women 8.8 grains of uric acid daily. The proportion in one thousand parts may be seen in the analyses at page 609 of the last volume of THE LANCET.

The following analyses are reduced from those of Lecanu. For brevity we intend M to signify the maximum quantity of uric acid excreted in twenty-four hours, and μ the minimum, and Ax the average quantity, deduced from x analyses; and Ry the ratio, deduced from y analyses. A, B, C, I, K, are the cases referred to under the same initials in my last paper; D E F indicate middle aged men of good constitution; J and L refer to females, aged 43 and 19 respectively; the former being of a bilious, the latter of a lymphatic temperament.

		Grains.		Grains.
A	M	= 24.31.....	μ	= 9.75
	A_{12}	= 15.38.....	R_{12}	= 1.071
B	M	= 23.71.....	μ	= 7.9
	A_{13}	= 15.41.....	R_{12}	= 1.037
C	M	= 21.82.....	μ	= 8.9
	A_9	= 17.28.....	R_9	= 1.175
D	A_1	= 23.35.....	R_1	= .704
E	M	= 6.99.....	μ	= 2.36
	A_6	= 4.66.....	R_6	= 1.766
F	M	= 13.89.....	μ	= 2.84
	A_{10}	= 6.20.....	R_{10}	= 0.454
I	M	= 10.79.....	μ	= 5.89
	A_8	= 7.28.....	R_7	= 0.331
J	M	= 7.1	μ	= 0.76
	A_3	= 6.98.....	R_3	= 0.76
K	M	= 11.25.....	μ	= 6.350
	A_4	= 9.11.....	R_4	= 0.635
L	M	= 10.50.....	μ	= 4.24
	A_4	= 6.67.....	R_4	= 0.59

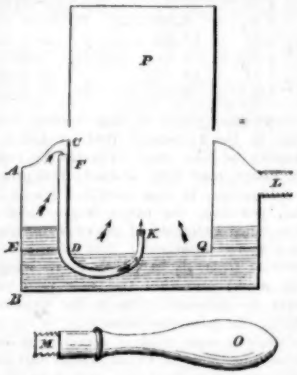
From this series of experiments Lecanu came to the conclusion that, *in health*, the quantity of uric acid excreted in twenty-four hours, may vary, *at least*, from upwards of 24 grains, to less than 2.5 grains; and that, possibly, the range might have been even more extended if the experiments had been more numerous; that healthy urine contains from $\frac{1}{392}$ to $\frac{1}{10000}$th of its weight of uric acid; and that the uric acid voided bears no constant ratio to the quantity of urine. He also concludes that, in the same individual, uric acid is secreted in nearly equal quantities in equal times, but that in different individuals the secretions of uric acid may vary very much during equal times.

Lehmann made an examination of his own urine, while in perfect health, and living on his ordinary mixed diet, for thirteen days consecutively. The following numbers express the mean of his results. The specific gravity was 1022.3; the daily quantity of urine rather more than 33 ounces; the daily quantity of uric acid very nearly 18 grains; and the proportion in one thousand parts, 1.089.

According to Duvernoy, the average quantity of uric acid in health is about 1 grain in 12 ounces, or about 3 grains in twenty-four hours; and from Dr. Thomson's analysis, given in my last paper, we should be led to conceive (from the data there furnished to us) that the daily secretion would be under 5 grains. We may probably revert to these discrepancies when speaking of the influence of food and climate upon the production of urea and uric acid.

We shall not offer any remarks, in the present paper, upon the state in which the uric acid exists in the urine; upon the means by which it is held in solution; or upon the nature of those deposits which are due to an excess of this acid in the urine, but shall proceed to a more detailed notice of the inorganic matters than we have yet done.

Inorganic Matters.—I have already (in my first paper) fully explained the method, which I consider the best, for the estimation of the fixed salts collectively. Before offering any further remarks upon the subject I shall briefly describe a simple piece of apparatus, which I always make use of at this stage of the analysis, because (as far as I am aware) it is almost unknown in London. It is a small spirit-furnace, which was introduced into this country, a few years ago, by Dr. Samuel Brown, who met with it at St. Petersburgh.



It consists of three principal parts. A, B, C, L; the body of the apparatus is about 3 inches in diameter, and 2.3 inches deep; it is furnished with a false side, represented in the diagram by C D, and a partial false bottom, E D, so fixed as to inclose the space A C D E, which has thus no communication with the inner space, C D E B, except by the bent tube F D K, open at both ends, and tapering to a very small aperture at K. The distance between A E and C D, and between E D and the bottom is 0.8 inch. M O is a handle, fitting by the male screw M, into L, which opens into the outer space. The part P forms a cover for the apparatus when not in use, descending into, and closely fitting the open space C D Q, situated below it in the diagram. It also answers the purpose of a measure.

This measure, P, is filled with alcohol, or pyroxylic spirit, and emptied by a small spout (not indicated in the diagram) through L, into the space between the sides, and the handle is screwed in. The same measure of spirit is introduced into the open space C D Q, and kindled. The spirit in the outer space soon warms and boils, and the vapour forced through F D K, under pressure, rushes through the centre of the quiet flame of the spirit in the open inner space C D Q, and produces a little torrent of fire, forming a continuous column, 6 inches high, for about twenty minutes. It is extinguished by slipping P into its place.* Those who have not seen this little furnace in operation, can form no conception of its actual power. Mr. E. M. Clarke, of the Strand, has made a number of them for sale, from a specimen which I placed in his hands, which had been made by Stevenson, of Edinburgh,

With regard to the average quantity of fixed inorganic salts excreted in twenty-four hours, Becquerel assigns 150 grains for men, and 130 for women, of adult age and in perfect health. This estimate is, in my opinion, rather too low, and, in fact, Becquerel has allowed himself here (as in numerous other cases) to generalise too hastily. In this instance he places the superior and inferior physiological limits between which (in health) the quantity of inorganic salts must lie, at 10 grammes and 8 grammes respectively, or at 154.4 and 123.3 grains. It is somewhat strange that he should lay down these limits in so arbitrary a manner as he does, since he must have been aware that Lecanu's experiments at once overthrew them.

In eleven of the persons experimented upon by Lecanu, without regard to age or sex, the limits were 378 and 75 grains. In the young man A, the maxima and minima of four analyses were 340 and 218 grains; in C, they were 314 and 183 grains, as deduced from six analyses.

From Lecanu's experiments it further appears that the quantity of fixed salts is greater in men at an adult age than in women, children, or very aged persons:—

In man, at an adult age,—maximum, 378 grains; minimum, 150 grains; mean, 254 grains.

In woman, at an adult age,—maximum, 295 grains; minimum, 102 grains; mean, 216 grains.

In children, at about eight years,—maximum, 164; minimum, 99 grains; mean, 151 grains.

In aged persons (eighty-four to eighty-six years),—maximum, 147 grains; minimum, 75 grains; mean, 121 grains.

The objections made to Becquerel's limits of the quantity of fixed salts discharged in twenty-four hours, hold equally good regarding the limits which he assigns for their relative proportion in 1000 parts. These limits he places at 8 and 5.5; a reference to the analyses collected in my last paper, or to my own analyses in the present communication, will at once point out their fallacy.

Having thus considered the saline mass generally, as far as its quantity and relative

* Description of a Spirit-furnace, brought from St. Petersburgh, by Samuel M. Brown, M.D., Edinburgh. (London and Edinburgh Monthly Journal of Medical Science. Vol. I. Page 449.

proportions are concerned, we shall proceed to offer a few remarks upon the variations of each individual portion of it.

α.—The quantity of the earthy phosphates voided in twenty-four hours may vary, according to Lecanu, from 30 to 0.44 grains. Lehmann found that he excreted, when in health, about 17 grains in twenty-four hours. The quantity excreted during this period of time appears to vary as much in the same individual at different periods as between different individuals; thus, upon examining this point upon two separate occasions in a woman of twenty-eight years of age, in good health and taking moderate exercise, the quantity in one of these analyses was found to be 21 grains, and in the other only 3 grains. The same experiment was tried upon six occasions upon a healthy man, aged thirty-five, of an athletic form, bilious temperament, and, at the period referred to, confined to the house in consequence of a fracture of the clavicle. In this case the limits were 17 and 6.3 grains respectively.

An opinion was broached, some thirty or forty years ago, by Fourcroy, that the urine of aged persons contained a large proportion of this salt, in consequence of the osseous system being surcharged with earthy phosphates. Recent observation has shown the opinion to be utterly devoid of truth. Guibourt, Rayer, Lecanu, &c., have treated urine passed both by old men and adults with oxalic acid, and have found that, usually, that of the adults became turbid, whilst the urine of the old men retained its original transparency.

The proportion of the earthy phosphates in the urine of pregnant women is remarkably diminished, in consequence of that material being required for the formation of fœtal bone. The diminution is so well marked as to have led Donné to propose it as a test for pregnancy.

β.—The quantity of common salt (chloride of sodium) voided in twenty-four hours varied, in Lecanu's experiments, from 116.5 to 0.247 grains. In the same individual the quantity varies at different periods, and is directly influenced by the quantity of salt taken with the food. In A it was found to vary, upon four different trials, from 116.5 to 67 grains, and in E, in six trials, from 82 to 29 grains. Dr. Prout observes that the quantity of chloride of sodium in the urine diminishes remarkably upon the near approach of death. From my own observations I am led to differ from him upon this point; the diminution in the cases observed by Dr. Prout was probably due to the circumstance of little or no chloride of sodium having been recently taken into the system. I should, perhaps, remark that my objection particularly refers to the urine of persons dying simply of old age. I am perfectly aware that in *some* diseases, especially in typhus fever and typhoid diseases, the chloride of sodium is found in only very minute quantities in the urine as the disease approaches a final termination.

γ.—The quantity of sulphuric acid in the urine of twenty-four hours averages, according to Becquerel, about 17 grains. According to Lehmann's observations upon himself it appeared to amount to about 34 grains daily. Lecanu found it to vary from 57.5 to 15.25 grains. Simon* has endeavoured to show that there is a constant relation between the quantities of urea and of sulphuric acid; that is to say, that the sulphates and the urea always increase and decrease in the urine simultaneously.

δ.—The quantity of phosphoric acid or the phosphate of soda and ammonia contained in urine voided in twenty-four hours varies, according to Lecanu, from 25.37 to 0.17 grains. Dr. Thomson found, in 1000 grains of urine, 1.131 of phosphoric acid, independently of the phosphate of lime. This corresponds with about 12 grains daily. According to Becquerel the *whole of the phosphoric acid* (including the phosphoric acid of the phosphate of lime) amounts only to 6.3 grains.

Although the value of these observations is perhaps diminished by the want of constancy in the results, they are, at any rate, sufficient to show the fallacy of an opinion expressed by one of our highest authorities that the quantities of sulphuric and phosphoric acids in the urine are very nearly equal.

The quantity of phosphoric acid (in combination with soda and ammonia) is by no means constant in the urine of the same individual. Thus, in the case A, of Lecanu, one analysis gave nearly 11 grains, and another not quite 1 grain, of this acid; and in the case C, one analysis gave 2 grains and another not quite 2 grains; or, in other words, in one case it was about ten times as abundant as the other.

Lecanu is of opinion that the sulphates and the phosphates of the blood are sufficient to account for the small quantity of sulphuric and phosphoric acids daily excreted by the urine, without having recourse to the assumption of Berzelius that the sulphur and phosphorus of the albumen, fibrine, &c., are oxidised by the kidneys. We must reserve the discussion of this question to a future day, and shall conclude the present paper with another reference to the labours of Becquerel. He estimates the quantity

* See Simon's "Anthropochemie," p. 367. The "*Anthropochemie*," forms the second volume of the "Medizinishen Chemie." An English edition, with copious notes by Dr. Simon, is now in the press, which will contain a much more perfect abstract of the true state of animal chemistry than any work that has yet appeared in our language.

of potash excreted daily at 26 grains, and the aggregate of the soda, lime, and magnesia, at about 80 grains.

In the present number of the "British and Foreign Medical Review" there is a review of Becquerel's work upon the urine, in which the author has unfortunately mistaken grammes for grains. I venture to notice this error publicly, in order to put the readers of that (otherwise excellent) article upon their guard with respect to the numerical data, which are thus rendered perfectly valueless.

Southwick-street, Hyde-park-square.

CASES OF ACUTE ARACHNITIS OCCURRING IN CHILDREN.

To the Editor of THE LANCET.

SIR,—I have sent for insertion in THE LANCET, with your permission, a detailed account of two interesting cases of arachnitis occurring in infancy, which I read before the Westminster Medical Society at their last meeting. The first of these cases came under my observation within the last few days, and the other ten years ago. They are the only cases of the kind I have had an opportunity of observing, in a practice of some extent among children, and, in the opinion of several of my medical friends, they are of rare occurrence. I have, therefore, thought their publication would not be altogether devoid of interest to others. Little discussion took place at the Medical Society, still the cases, whether viewed in contrast or considered separately, offer some points of considerable interest; and especially in reference to convulsions. In the second case there were none. The mother of the child assured me he had never had a fit of any kind. Now, what was the pathological condition observed? Effusion of a layer of lymph under the arachnoid upon the whole superficies of the brain, a large effusion of serum into the ventricles, and upon the brain between the membranes, giving rise to a decided tumefaction of the scalp above the anterior fontanelle, and but little or no effusion at the base of the skull. It is here perfectly obvious there had existed no undue pressure upon the medulla oblongata from serous effusion, so abundant between the membranes upon the brain and in the ventricles, and hence the true spinal system was not involved. In the first case, the child had no convulsions until within a few days of his death. Previous to their accession I had been so forcibly impressed with the increasing tumefaction above the anterior fontanelle, that I seriously entertained the notion of puncturing it. Contemporaneously with the convulsions, the swelling abated; on the last day of his life it had quite subsided, and death was followed by a corresponding depression. Now, what was the pathological condition in this case? I need only allude to the serous effusion. It was found exclusively at the base of the skull, and in the spinal cavity. Here it is manifestly obvious that the medulla oblongata and spinal cord were subjected to undue pressure; the true spinal system was involved, and for the last two days of his life the child was not free from convulsion. I think it is due to Dr. Marshall Hall to say that since his discoveries and exposition of the nervous system, more especially of the true spinal, the cerebral diseases of children have, in my mind, been invested with a new and an intense interest.

Arachnitis of the ventricles and basis of the brain is, I believe, considered peculiar to infancy. In the present case, the drawing backwards of the head was a strongly marked symptom, and proved a true indication of the existence of inflammatory action about the pons varolii; for here there was a thick layer of this lympho-purulent substance. I regret not having had opportunity of seeing this substance under the microscope; but, on the authority of a competent observer, I may add, the pus corpuscles were more numerous than the lymphatic. In its general appearance and characters it partook more of the nature of lymph than pus; it appeared to be lymph passing or degenerating into pus. I am, Sir, your obedient servant,

ROBERT DUNN.

Norfolk-street, Feb. 12, 1844.

CASE I.

Acute arachnitis occurring in a child five months old, in which the interior of the ventricles were found to be filled with a yellow, thick, consistent substance (lympho-purulent), and a layer of which was also found situated between the tunica arachnoides and pia mater, on the anterior convexity of the cerebrum, and at the basis of brain, where the optic nerves decussate, and about the pons varoli.

History.—The child was born a fine, healthy, strong boy, and continued so for the first two months, when Mr. Dunn was called to attend it for an attack of diffused bronchitis, with pneumonia of the left lung. This was on the 11th of November. The attack was a very severe one, and he was obliged to have recourse to leeching, blistering, calomel, and antimony, and saline medicines. To his surprise, after the child had been closely confined to the bedroom for sixteen days, the eruption of measles appeared. At the commencement of the attack the symptoms led to an apprehension of measles or hooping-cough, but he had quite abandoned the expectation of either, when the measles suddenly came on. About the third or fourth day from the attack, a slight eruption had appeared, resembling roseola, but it only remained a few hours. The child

did well, and by the first week of December was quite free from cough, and appeared to be perfectly restored to health. He continued well up to the last week in January, when an unfortunate exposure to the cold night air was followed by an attack of bronchial and pneumonic inflammation. Mr. Dunn was called to him on the 28th of January, and he died on February 27th. He found him labouring under great difficulty of breathing, quick pulse, and hot skin. On the left side of the chest there was great dulness of sound on percussion, and the respiratory murmur was scarcely audible. The child could not lie on the left side. Leeching blistering, calomel, and antimony, were again had recourse to. After the lapse of two or three days some amelioration of the more urgent symptoms took place, the breathing became less hurried and difficult, but now the child showed symptoms of cerebral disease. He was dull and heavy, there was great heat upon the scalp, especially about the forehead and temples, and a drawing of the head backwards. The pulse was excited, and the face suffused, and at times there was great anxiety of expression, and a hurriedness and catching in his manner. In this state he continued for three or four days, when he had a severe convulsive fit, which left him exceedingly low. The arms and legs were rigid during the fit, and affected with spasmodic twitchings, and there was a croupy condition of the breathing. The fit lasted for about an hour and a half. Previous to this time the extremities, but more especially the arms, had frequently been observed to be stiff and rigid, but this soon went off again. From the time of the fit the child presented unequivocal symptoms of effusion into the brain, and for the last two days of its life was in continual convulsions, with dilated pupils, squinting, &c. Up to the time of the fit he appeared to be sensible; the pupils were not dilated, and he took the breast as usual. For three or four days before he died Mr. D. was much struck with the distended state of the scalp immediately above the anterior fontanelle. It had become quite a large tumour, in which he could feel distinct fluctuation to the touch. This swelling gradually diminished from the time of the fit until the child's death; and after death the part was found depressed to an extent corresponding to the previous tumefaction. But for the diseased state of the child's lungs, and consequent hopelessness of recovery, he would have recommended tapping; and, indeed, gave the point his best consideration.

Examination.

Head.—On raising the calvarium, and with it the dura mater, the anterior convexity of the brain presented a striking appearance. It was coated with a thick layer of a substance the colour of cream, but of greater consistency; this extended down between the hemispheres to the corpus callosum, and the interior of the ventricles were filled with it. The same substance was found at the basis of the brain where the optic nerves decussate, and surrounding the pons varolii. It was situated between the tunica arachnoidi and pia mater. The upper part of the brain and posterior convexity presented quite a roseate hue, or blush, from the excessive injection of the vessels of the pia mater. The substance of the brain itself was soft, and slightly œdematous. There was no effusion of serum found in the ventricles, but about five or six ounces at the basis of the brain and spinal cavity.

Chest.—The right lung appeared to be healthy. The left was completely hepatised, consolidated, and shrunken in size; the pleuræ on the same side were firmly adherent, and between them was interposed a thick layer of lymph, much resembling that which was found upon the surface of the brain, but apparently of not so recent an origin.

CASE II.

Acute arachnitis in a child nine months old (a twin), with effusion of water between the membranes and into the ventricles, and in which a layer of lymph was suffused under the tunica arachnoides upon the whole superficies the brain. (*Born, Sept.* 7, 1832, *died June* 24, 1833.)

From the time of his birth he was noticed to be a dull, heavy child (when compared with his sister), very placid and quiet, seldom crying; jumping and tossing about in the act of nursing he could not bear. It seemed to distress him, yet he appeared to thrive and do well until the period of vaccination, the middle of April, a few days after which he was seized with an inflammatory affection of the chest and considerable disturbance of the head. After cutting a tooth, which was looked upon as the exciting cause, he gradually recovered, though from this time the dulness and heaviness seemed to increase upon him, and his head, which had always been considered too large, become more developed and projecting. Indeed, Mr. Dunn thought him the subject of chronic hydrocephalus. He had not seen him for some time, when he was brought to him by his mother on the 22nd of June, 1833, two days previous to his death. She said that for a week and upwards he had been very much relaxed in his bowels, but that three days previous he had been seized with sudden fits of screaming, a very unusual occurrence with him, and which she attributed to the state of the bowels. There was a great heaviness about the eyes, and in the general expression of the child. The veins of the temples and forehead were particularly turgid, the skin was hot and the pulse sluggish. He ordered the child to be put up to its middle in hot water, and the bowels to

be fomented with flannels while in the water. The grey powder, with compound chalk powder and mixture, were administered. The next day there was little amendment. The gums were lanced, and the cretaceous medicine continued. On the 24th the relaxation of the bowels had but little abated. The state of the brain had counter-indicated the use of opium, and now the symptoms of compression were clearly manifest. He advised the application of two or three leeches, but they were not applied. Up to this time the child had had no convulsion. It had been perfectly sensible from the first of the attack, but at four, p.m., the legs and arms became occasionally stretched out and stiffened, the mouth twitched, and a state of coma gradually supervened; at eleven o'clock he died. He had never had a fit from his birth.

Examination.

Head.—On dissecting back the scalp there was met with a degree of moisture,—a slight serous effusion between it and the bone, which bedewed the superficies of the skull. The head was large and projecting, and viewed externally the bones had the appearance of being forced out from within. The sutures were not closed, the anterior fontanelle was large, and prominently raised, and being pressed by the finger the fluctuation of a fluid underneath was distinctly felt. In raising the calvarium it was only necessary to saw through the anterior part of the os frontis, and then to pass the scalpel along the squamous and lambdoidal sutures. The dura mater was found to be so closely adherent that it was divided and raised with the bones, when more than half a pint of serum, which had been contained between the membranes, escaped. Besides the effusion there was found in the inner and smooth surface of the dura mater a considerable deposition of fibrin, not very firm and consistent in its substance. The dura mater having been raised with the calvarium the brain presented the following appearance:—Underneath the arachnoid, throughout the whole superficies of the brain, and so firmly adherent as not to be separated from it or the pia mater, there was situated a thin layer of a yellow, straw-coloured substance, in appearance resembling cream, through which the vessels with their red blood were seen variously ramifying, and giving to the whole a very peculiar and striking appearance. In attempting to raise the deposition which did not seem to be pus, but a layer of soft, yellow lymph, from the surface of the convolutions upon which it was deposited, the arachnoid and pia mater were raised with it. The substance of the brain was soft and flabby. It had an œdematous appearance and feel, and upon pressure gave out at innumerable points a serous fluid. The plexus choroides was pale and blanched. The lateral ventricles were distended with a serous effusion; there was also a very slight effusion found at the basis of the skull.

Thorax.—There were pleuritic adhesions on both sides, weak on the right side, and the lung healthy, but strong and firm on the left, and the inferior lobe of the lung completely changed in structure; soft, flabby, impervious to air, and liver-like on both sides, with slight effusion. The heart was considerably larger than is met with at the age, and both auricle and ventricle on the left side were hypertrophied.

Abdomen.—The viscera of the abdomen presented nothing particular. Here, too, there was a slight effusion into the peritoneum. There seems to have been a general tendency to effusion into all the serous cavities of the body.

CASE OF EXTRA-UTERINE PREGNANCY.

To the Editor of THE LANCET.

SIR,—If you think the following case worthy of insertion in your valuable Journal, I shall feel obliged by your publishing it.
I am, Sir, your obedient servant,

J. WHEATCROFT.

Abbots Bromley, Staffordshire,
Feb. 8, 1844.

On the 23rd of September last, I was called to see Harriet Jackson, ætat. 40, who had been long suffering from disease supposed by her friends to be dropsy; she dated the commencement of her complaint three years back, when she first supposed herself pregnant, having abdominal enlargement, and the other attendant symptoms; at the termination of the usual period of gestation she was attacked with uterine pains and the other concomitant symptoms of parturition, which lasted two days; these ceased without any birth taking place, but there was considerable aqueous discharge. From this time there remained a dull fixed pain in the left iliac region, the enlargement being almost confined to that side. She gradually emaciated, and for the last twenty weeks was confined to bed from debility. Two months previously to my seeing her she was attacked with diarrhœa of a very fetid character, which I found her suffering from with red tongue, small rapid pulse (152), extreme attenuation, the abdomen rugous and scaly, and considerable tenderness and enlargement of the left side. From these appearances, and the previous history, I concluded that it was a case of extra-uterine fœtation. On account of her extreme debility tonics were given, during the use of which she gained sufficient strength to leave her bed, the pulse came down to 120, the tongue assumed a healthy appearance, the diarrhœa abated, and the appetite improved.

A month ago she passed, *per anum*, a tibia and ulna of a full-grown fœtus. Upon examination I found the upper portion of the rectum almost filled with bones, some of which, feeling loose, were extracted; at different times I took out the other tibia, a femur, fibula, the two temporal bones, two ribs, a humerus, and a radius. On the 25th of January she became suddenly worse, and sunk rapidly, her death taking place on Sunday, the 28th. The following day I made an examination of the abdomen with two medical friends (Mr. Higgins and Mr. W. Higgins), not being allowed to examine the chest.

On laying open the abdomen we found the integuments opposite the left iliac fossa, inseparably united to the muscular parietes, and almost perforated by ulceration; this corresponded with a large sac, occupying nearly the whole of the pelvis, communicating both with the uterus and upper portion of the rectum, filled with fæces and the remaining fœtal bones; *the whole of the posterior wall of the uterus was destroyed.* The ovaria and Fallopian tubes were so altered from their normal condition by the extensive ulceration as to afford no clue to the original situation of the ovum. The rest of the abdominal viscera were healthy.

The principal singularity in this case appears to be that as there was so free a communication with the uterine cavity, there should be no discharge, or the appearance of any fæces per vaginam, especially as we found the os uteri partially open. Will any of your readers oblige me by explaining this?

ACCOMMODATION OF THE EYE TO DISTANCES.
ANATOMY OF THE OBLIQUE MUSCLES.

To the Editor of THE LANCET.

SIR,—In your number for January 6, a correspondent, who signs himself "A Student of a Provincial School," has directed the attention of your readers to the question of the accommodation of the eye to distances. He tells us that one of the views which have been entertained on the subject is, "that the desired changes are effected by a contractile power, diffused over the whole sclerotica," and another, "that the active agent is a similar contractile power restricted to the cornea." To me, at least, these are entirely new notions, and I should feel obliged to your correspondent if he would favour me with a reference to the authors by whom they have been broached.

After stating that the eye, in a quiescent state, sees objects most distinctly at the distance of 12 or 14 inches, your correspondent jumps to the conclusion that it is unable to see any nearer object with distinctness, a statement notoriously contrary to the fact. A normal eye, in the exercise of what is termed quiescent vision, will read THE LANCET at the distance of 12 or 14 inches, but, by exercising its accommodating power, it will read it also at 10, or 8, or 6, or perhaps 4 inches. It is well known that Mr. Abernethy, when his eyes were examined by Dr. Thomas Young, was found to enjoy perfect vision from 3 to 30 inches; no doubt a very extraordinary range, but quite in harmony with what every normal eye may be shown, by the employment of the optometer, to possess in a considerable degree. In reading at less than 12 or 14 inches' distance, the mechanism of adjustment is called into action, and more and more so as the distance diminishes. At 12 or 14 inches' distance, the mechanism is relaxed, although not completely; for to read at 16, or 18, or 20 inches, as many a normal eye can do, the focal length of the organ must be still farther increased by a still greater relaxation of the adjusting powers. The assumption of your correspondent, "that the unaltered adjustment of the eye corresponds to the nearest object that can be contemplated with distinctness," is altogether inadmissible, as well as his statement, "that all the focal adjustments which are required in vision must, of necessity, be of such a character as to require an approximation between the lens and the retina."

Proceeding on the false supposition that the adjustment is only that of lengthening the focal distance when remote objects are regarded, your correspondent goes on to show that the effect of the action of the oblique is to shorten the axis, or antero-posterior diameter of the eye, a notion which I believe to be also erroneous. He describes the insertion of the inferior oblique as corresponding to the axis of vision. I think the slightest re-examination of the parts will convince him that he is wrong. The axis of vision touches the vertex of the retina, which is about 1½ tenths of an inch from the centre of the termination of the optic nerve. The middle of the insertion of the inferior oblique is at least half-an-inch from the centre of the termination of the optic nerve. The description generally given of the oblique muscles, is, that they form a loop, embracing the temporal side of the eye-ball. It is certainly on the temporal, rather than on the posterior, aspect of the eye-ball, that these muscles are inserted. If their action, therefore, has any effect on the figure of the eye-ball, it will be to elongate its axis, and thus adjust the organ to near objects; not, as your correspondent asserts, to accommodate it to distant objects by shortening the distance between the retina and the lens.—I am, &c.

PHILOPHTHALMOS.

MORE boys than girls die of pneumonia under one year of age.—*Mr. Farr.*

WESTMINSTER HOSPITAL.

CASES OF

GASTRO-ENTERIC FEVER,

WITH

CLINICAL REMARKS

By DR. BASHAM.

Case 1.—Sarah Lee, seventeen years of age, was admitted, Oct. 17th, under Dr. Basham, with febrile symptoms of four days duration and frequent rigors during that period. The skin is intensely hot; face flushed; pulse 120, sharp, and incompressible; there is considerable tenderness at the epigastrium; tongue of a light-red, and furred; respiration hurried; there has been considerable irritability of the stomach; alvine evacuations irregular; urine small in quantity and high coloured. She was ordered five grains of the chloride of mercury, with the like amount of the compound powder of antimony; the ordinary diaphoretic mixture every four hours; and a purging draught in the morning. Beef-tea diet.

18. Bowels freely open by the above medicines; evacuations copious, fetid, and dark coloured; epigastric tenderness continues. A blister to be applied to the precordia, and to continue the febrifuge draught.

19. Bowels much relaxed; epigastric tenderness much abated; increase of febrile symptoms, characterised by augmented heat of skin; tongue of a burning-red hue; pulse 120, soft, and compressible; cheeks tinged by a deep circumscribed flush; lips parched and inclined to crack; eyes dull and glassy, inexpressive, and frequently upturned. There is also increased prostration of strength. The diaphoretic mixture to be discontinued, and a draught of the acetate of ammonia, with fifteen drops of Battley's solution of opium in camphor mixture, to be taken every four hours; also a pill of ten grains of chloride of mercury with half a grain of opium, night and morning. Beef-tea, of double strength, for diet.

During the following three days the symptoms abated, and the patient rallied considerably; but on the 24th the prostration of strength had become further increased by the frequent irritability of the stomach, and vomiting of a green bilious fluid. Pulse 126, very weak; tongue as before, bright-red at the sides, brown on the dorsum; no abdominal tenderness perceptible; skin intensely hot; bowels frequently relaxed. The pills to be omitted; soda water and sherry wine to be given frequently.

25. Passed a quiet night, slept two or three hours consecutively; the irritability of the stomach has abated, and she has taken beef-tea and other nutriments, jelly, &c.

26. Another quiet night, sleep refreshing; tongue more moist, and reports herself better; slight abdominal tenderness perceptible; some flatulent distention. Latter symptoms relieved by enemata.

27 and 28. Passed two restless nights; skin intensely hot; bowels much relaxed; occasional muttering and low delirium towards night. Repeat the enemata, with tincture of opium.

29. Symptoms of improvement; abdominal tenderness and flatulence disappeared; tongue moist; again able to take some nourishment and wine.

30 and 31. Recurrence of unfavourable symptoms; increased prostration; sordes collecting about teeth and lips; pulse 132, wiry; skin lower in temperature; bowels much relaxed; stomach quiet. To take five grains of mercury and chalk with the like quantity of compound powder of ipecacuanha, every four hours. Continues to take beef-tea, arrow-root, and wine.

Nov. 1. Irritability of stomach returned, with vomiting of green bilious fluid, and diarrhœa. Enemata of starch and tincture of opium.

On the following day the symptoms again abated, and on the 4th of November the skin became cool after a copious and spontaneous sudoresis. The stomach remained quiet; bowels opened but once, and evacuations of an improved bilious aspect; urine clear. She was ordered the aromatic spirits of ammonia, with half a grain of the hydrochlorate of morphia, at night, and to be repeated if necessary.

On the following day the symptoms continued stationary, but the prostration of strength and exhaustion fearfully increased. No delirium, but frequent suspiration; mental consciousness; efforts at speech inarticulate from debility. The infusion of serpenteria, in half-ounce doses, was directed to be given three times daily. No other symptoms manifested themselves, but she continued to sink, and died at two o'clock, p.m. November 5th.

After-death Appearances. — The body, which was examined twenty-four hours after death, was much emaciated. Brain and its meninges natural; a trifling quantity of serum in the ventricles. Thoracic viscera healthy. External peritoneal surface of the stomach and intestines natural. Mucous membrane of intestinal canal congested in parts; faint diffused traces existed in the stomach, edges of valvulæ conniventes, and jejunum. Glandulæ Brunneri of duodenum enlarged and solidified, appearing to be white opake dots. The congestion of the mucous surface increased much in intensity towards the lower eight inches of the ileum, and there were several patches of ulceration, exhibiting the ordinary characteristics of red elevated eges with depressed centres of ulceration. The entire circumference of the ileo-cæcal valve was also involved in ulce-

ration. The other abdominal viscera were natural in appearance.

Case 2.—Oct. 3. Eliza Green, twenty-three years of age, a nurse in the hospital, was placed in Dr. Basham's ward, having suffered for the past three or four days with frequent rigors. There is considerable tenderness of the epigastrium, with frequent vomiting of a green bilious fluid. There is anorexia; thirst; impaired perception of taste; irregular bowels; tongue furred, but intensely red at the sides; temperature of the skin much augmented; pulse 120, full and bounding. Twelve leeches were directed to be applied to the epigastrium, and six grains of the chloride of mercury with five of the extract of hyoscyamus, to be taken immediately, with a draught of the solution of the sulphate of magnesia and carbonate of magnesia in peppermint-water, six hours afterwards; to be continued at intervals, until the bowels shall be freely moved. She was also to take, at six-hour intervals, two grains of the chloride of mercury and half a grain of opium.

4. The bowels acted freely from the above medicine; evacuations highly offensive; skin intensely hot; tongue furred, red, but inclined to be moist. A febrifuge draught every four hours.

6. Irritability of stomach returned, with vomiting of green bilious fluid; lower part of abdomen tender on pressure. Six more leeches were applied with relief. The irritability of the stomach continued at intervals to the 16th, the same remedies being continued, except the calomel and opium. On the 18th some flatulence appeared, which was relieved by a turpentine enema. The heat of skin became diminished, and the pulse fell to 96. Slight symptoms of ptyalism appeared also. The nights were restless, but twenty drops of Battley's solution of opium allayed the vigilance, and gave evident relief. She had some quiet and refreshing sleep; the skin was natural in temperature; pulse 80, soft; tongue clean and moist; appetite increasing; all the symptoms gradually abated, and she was reported convalescent on the 24th.

Case 3.—Mary Ford, forty years of age, a stout, robust woman, but who has lately been in a state of destitution, was admitted Oct. 26, under Dr. Basham, complaining of headach, general prostration of strength, and frequent rigors. The pulse is 96, sharp and cordy; tongue is moist and furred, but red at margin; skin intensely hot; face flushed; tenderness at the epigastrium, but no vomiting. She was ordered five grains of the chloride of mercury, and a similar quantity of the compound powder of antimony. A purging draught in the morning, and a diaphoretic mixture every four hours, with a hypnotic of twenty drops of Battley's solution of opium. Beef-tea diet.

27. Passed a very restless night; skin burning hot; pulse 90; tongue furred and red; bowels relaxed; evacuations fetid. For the three next days the symptoms gradually abated, the epigastric tenderness disappeared, and the bowels becoming torpid were relieved by a common enema. Some tympanitis occurring on the 31st a turpentine enema caused the discharge of much flatus.

On the 3rd of November the irritability of the stomach (notwithstanding the previous favourable progress) returned, and vomiting of green bilious fluid occurred several times during the day; the epigastrium and inferior parts of the abdomen are tender on pressure. Soda water was directed to be given *ad libitum*, and twelve leeches to be applied to the epigastrium. This afforded temporary relief, but the irritability of the stomach continued for the five following days, with frequent vomiting. Diarrhœa supervened, and the epigastric tenderness occurring again on the 9th, a blister was applied, and five grains of the mercury with chalk, and five grains of the compound ipecacuanha powder every four hours. Skin hot; pulse 108, soft.

10. Vomiting continues at intervals, but the skin has become cool; pulse 102, soft; tongue moist but furred. She was directed to abstain from attempting to take ingesta of any kind, either fluid or solid. The bowels, if necessary, to be relieved by enemata.

11. Stomach perfectly quiet; slept at intervals, and refreshed from it. Beef-tea in small quantities. Skin continues cool, and tongue moist and cleaning; bowels open.

17. All the symptoms subsequent to the last report gradually subsided, and during the last six days she has each day borne increased quantities of nutriment. She gains strength daily, and may be reported convalescent.

Case 4.—Margaret White, thirty-eight years of age, a charwoman, admitted October 26, under Dr. Basham, with pains in the limbs; headach; rigors, of some days duration; there is great heat of skin; pulse 122, small and wiry; tongue furred, brown, red at margin; tenderness at the epigastrium; irritability of stomach, with frequent vomiting of green bilious fluid; bowels relaxed; much thirst; great prostration of strength and sleepless nights. To take three grains of the chloride of mercury with five of the compound powder of ipecacuanha. Ten leeches to be applied to the epigastrium. Castor-oil occasionally. Beef-tea diet.

27. Epigastric tenderness abated; pulse 130; skin hot; very restless night. To take the sesquicarbonate of ammonia with the acetate of ammonia and camphor mixture.

28. Irritability of stomach; vomiting of green bilious fluid; pulse 122; tongue dry and red; lips and teeth coated with sordes.

Some bronchial symptoms supervening, characterised by cough and mucous gurgling in the larger bronchi; a blister was applied to the chest, and twenty drops of Battley's solution of opium given at night.

Nov. 1. The four last days have been characterised by slight improvement; the tongue is now moist; skin much cooler; pulse 108, soft; expectoration frothy and mucoid; cough troublesome; the febrile symptoms gradually abated; the irritability of the stomach did not return, the bowels became regular, and the bronchial symptoms alone required attention. With opium and sulphuric acid she gradually recovered strength, and is now (Nov. 17) reported in the books convalescent.

Case 5.—Anne Ely, aged twenty-three years, in service, admitted Nov. 7, suffering from rigors and headach, of six days duration. Skin intensely hot; epigastrium painful on pressure; abdomen tympanitic; cheeks flushed; pulse 132, jerking and small; tongue furred, and intensely red at margin; bowels open; there is great thirst, with nausea and desire to vomit. Eight leeches were ordered to the epigastrium. A turpentine enema, and five grains of the chloride of mercury, and half a grain of opium.

Nov. 8. Bowels freely open by the enema; evacuations fetid and dark-coloured; much discharge of flatus downwards; irritability of stomach abated; epigastrium bears pressure without pain; pulse 110; skin hot; tongue red and dry. A febrifuge draught every four hours.

At the daily visit on the 9th she lay in a state of perfect insensibility; features fixed; pupils dilated; all the phenomena of a cataleptic spasm; no tenderness or fulness of the abdomen; but the catheter was directed to be used, and a pint and a half of offensive urine drawn off; consciousness returned in the afternoon; pulse 115, small; respiration quiet; considerable prostration of strength; mental faculties entire; bowels relaxed. A blister to the neck and temples.

10. Symptoms improved.

11. Irritability of stomach, with vomiting of green bilious fluid; epigastrium tender; towards the afternoon fell again into a rigid state of spasm; eyes fixed; pupils dilated; skin hot; pulse 115. The whole muscular system is in a state of fixed spasm; the limbs retain any position in which they are placed.

She died on the 12th, never having recovered from the cataleptic paroxysm. It was subsequently ascertained from her friends that she had been subject to fits, and her mind had suffered from hallucinations.

Post-mortem, Twenty-four Hours after Death.—Body robust; meninges of the brain congested, especially the pia mater; vessels could be traced in the transparent portions of the arachnoid; the white matter of the brain was firm and dense, and the grey matter of a pinkish hue; no serum in the ventricles or at the base of the brain. Thoracic viscera healthy; external surface of the abdominal viscera natural; the intestinal mucous surface was not otherwise than natural till within about twelve inches of the cæcum, the ileum at this point being deeply congested with a few scattered patches of ulceration of the ordinary character; the entire surface of the cæcal pouch, together with the margin of the ileo-cæcal valve, was involved in ulceration. The liver, spleen, pancreas, and kidneys natural.

CLINICAL REMARKS.

Dr. Basham called the attention of the students to these cases, and to several others still under treatment, as remarkable for the uniform type of the symptoms, and as characteristic of an epidemic form of fever which had prevailed about Westminster during the past two months, many cases having occurred out of the hospital identical in character to that which had furnished so many cases in it. This fever had been unusually severe and fatal, and the post-mortem examinations made in the hospital had afforded excellent examples of the pathology of this species of fever.

The incipient and premonitory symptoms were not always very correctly obtained, the patients being often admitted in that stage in which it was impossible to collect any very certain account of their previous complaints. They might be stated, however, to consist principally of headach, nausea, rigors, with painful digestion, colic, or griping pains in the abdomen, with tenderness of the epigastrium; also great and unusual prostration of strength, with much irritability and restlessness at night. In some few cases there had been vomiting from the commencement, with occasional (not constant) spontaneous diarrhœa. The other symptoms were those common to all fevers. On admission, and the patients being examined, the symptoms noted as more especially diagnostic were,—the epigastric and abdominal tenderness, the irritability of the stomach, the intense burning heat of the skin, the accelerated pulse, and the condition of the mucous membrane of the tongue, furred, rough, and scabrous, moist, or inclined to be dry, with the margin and extremity intensely red. As the symptoms progressed the irritability of the stomach increased; there was vomiting, in all cases, of a bilious green fluid, the epigastric tenderness continuing, and the burning heat of the skin unallayed; with the occurrence of occasional diarrhœa and fearfully increasing symptoms of prostration. The intellectual faculties, throughout, continued perfect, or only dull; no delirium, except towards the last, and that of a low passive character, the effect rather of inanition and

prostration than of any morbid condition of the sensorium.

That these symptoms depended on congestion and inflammation of the mucous surface of the alimentary canal, the post-mortem examinations bore abundant testimony; and, during life, the appearance of the surface of the tongue might be taken as a good example of the conditions existing in the other portions of the mucous membrane; the frequent recurrence of vomiting, and the continued irritability of the stomach to all, even the simplest, forms of ingesta, arose from this morbid condition of the mucous surface. That this irritability of the stomach was not dependant on cerebral inflammation or congestion was proved by the absence of all intellectual derangement, and natural condition of the brain after death. The state of the brain in the case of Ann Ely was accidental, as the previous history of her case proved, and was the immediate cause of death. The febrile symptoms, however, were dependant exclusively on the gastro-enteric inflammation and ulceration detected subsequently.

Death in this form of fever generally results from inanition. Fatal cases are usually very protracted, the patients sinking from the fearful prostration resulting from the rejection and the imperfect absorption of all kinds of nutriment. The post-mortem appearances of the stomach would explain this; in most cases after death it is congested, indicated either by a faint diffused redness or by the existence of patches of a deeper hue. Ulceration of this viscus is more rare. The duodenum is oftentimes involved in the same inflammatory condition; the valvulæ conniventes are often margined with red lines; but it is in the ileum and cæcum that the intense ravages of inflammation are most evident. Here, in the ileum, the tone of colour has deepened to a livid red, with patches of ulceration scattered over the surface, originating in the glandular follicles abounding in this region. In the cæcum, that important subdivision of the alimentary canal, the effects of inflammation are oftentimes concentrated; the whole pouch is thickened, and its internal mucous surface involved in one general destructive ulcer. Beyond this, traces of inflammation are rare. The colon is usually free, and the other viscera of the abdomen are ordinarily natural in appearance.

The treatment of this form of fever, Dr. Basham remarked, should be confined, from the first, to the use and application of those remedies which may modify or control the congested condition of the mucous membrane. Leeches should always be applied to the epigastrium, and, where the strength permits, frequently repeated on the occurrence of pain in the abdomen. The use of calomel and opium, or the chalk and mercury and compound power of ipecacuanha, should, if possible, be preserved in. In some cases the obstinate vomiting precludes the use of these internal agents till the irritability of the stomach has been allayed by the topical application of leeches, or even blisters. Soda water often affords temporary relief; the addition of hydrocyanic acid has been recommended, but till the congested state of the stomach has been relieved, such temporising remedies are futile. Wine and ammonia are always required to support the strength, and opium, with amylaceous enemata, to restrain the diarrhœa and its concomitant debility.

Dr. Basham, in conclusion, observed, that there was one invaluable prognostic symptom in this form of fever, on which we may always rely, it was the temperature of the skin; so long as the intense burning heat continued, so long must the patient be considered in jeopardy and the disease to have made no favourable progress. Often the vomiting will cease for a day or two, and allow an interval for some nutriment to be taken, giving fallacious hopes of a remission of this intractable symptom; yet, if the heat of skin remains constant, the recurrence of vomiting will be inevitable. But should the vomiting continue, even should the diarrhœa continue, yet the temperature of the surface abate, we may rely that very shortly a more favourable and permanent change will become evident. The cases of Mary Ford and Eliza Green are highly characteristic of these remarks, and the two fatal cases, especially the first (Sarah Lee), also demonstrate their practical value.

FOREIGN DEPARTMENT.

FOREIGN BODY FOUR YEARS IN THE EYE.

The following remarkable case of a foreign body, of considerable size, remaining for nearly four years in the interior of the eye, is related by M. Castelnau, and published in a recent number of the "Archives Générales de Médecine:"—

On the 29th of June, 1838, M. B., ætat. 30, foreman of the workshop of the Versailles railroad, a man of strong robust constitution, was wounded in the right eye. The accident occurred in the following manner:—M. B. was assisting a workman to introduce into some wood-work a steel wedge, which he was striking with a hammer of ten pounds weight, fixed at the extremity of a handle three feet long, when he suddenly felt a violent shock in the eye. A flood of tears passed from the eye, which was also the seat of a certain degree of pain, and sight was instantly destroyed. The patient remained some time sitting in the workshop, under the impression that these symptoms would soon disappear, as had frequently been the case before, under

similar circumstances; but finding that they did not mitigate, as he had expected, after waiting some time, he returned home, and having thrown himself on his bed, slept quietly several hours. On awaking, he found that his sight had not returned, and that the pain still persisted; he, therefore, came to Paris, and consulted M. Sichel. This surgeon told him that the cornea was perforated; that the sight of the wounded eye was irretrievably lost; that it would be necessary to act energetically, in order to prevent the development of inflammatory symptoms; and that once that danger passed, there would be nothing to fear, as no foreign substance had remained in the eye. Thirty leeches were, therefore, applied behind the ears; frictions were resorted to, with an ointment of the nature of which the patient is ignorant; cold was applied for some time to the head, by means of cloths soaked in cold water; and several mustard foot-baths were taken.

The inflammation which followed was not intense, but the pain persisted, and was accompanied by the continued oozing of an aqueous fluid, which soon produced excoriation on the cheeks. The wound of the cornea did not cicatrise. The treatment above mentioned was continued, with slight alterations, for nearly a month; at that epoch the patient consulted M. Carron du Villars, who merely confirmed the statement of M. Sichel. Soon after the wound of the cornea cicatrised. From that time the pain and oozing of fluid from the eye gradually diminished, and the patient was soon able to resume his labours. At first he could still distinguish day from night, but the sensation of light became, by degrees, more and more indistinct, until, at last, he lost it entirely, about eighteen months after the accident.

Two years had passed without any new accident, without even any pain manifesting itself. During that time the health of M. B. had remained constantly good, when one night he was seized with such intense pains in the head, more especially in the right eye and on the right side, that he uttered loud screams, and thought his reason would give way. A host of remedies were resorted to, leeches, opiates, cold applications, &c., during a day and a night, without producing any alleviation. On the second day the pain diminished a little, but it was not until the third that he was able to obtain any rest. On the fourth day all had disappeared, and for eighteen months he had no return of the cephalalgia.

At the end of February, 1842, three years and a-half after the accident, I was called to see M. B., for the first time. He stated to me that for several days he had suffered pains in the right eye, which, at first dull and irregular, had become sufficiently violent to prevent his sleeping. The conjunctiva was rather red, and the cornea presented in its centre a conoïdal prominence which at once attracted my attention. On inquiring whether a foreign body might not have penetrated into the eye, M. B. gave me the details which I have just narrated. He also told me that, having endeavoured to discover what it was that struck him, he found, on one side of the wedge, the trace of a splinter; that this splinter could not be found, but that it was of too considerable a size for it to have been possible that it should have entered his eye, and remained there so long, unless it had separated into several fragments. The opacity of the cornea was such as to prevent any examination of the interior of the eye; the eye itself had rather shrunk, as if it had lost a part of its humours. From the time of the accident the patient, who was accustomed to sleep on the right side, had been unable to do so without suffering great pain in the eye. These data not having completely dissipated my doubts with respect to the presence of a foreign body in the eye, I merely prescribed cold applications, frictions with a belladonna ointment, and mustard foot-baths. These measures gave no relief; the redness and pain increased, and in the course of a few days there appeared on the most elevated portion of the prominence of the cornea, a small solid angle, which its great hardness evidently showed to be a metallic substance. It was thus evident that all the accidents owed their origin to the presence of this foreign body, and I had to choose between waiting for the inflammatory process which existed, to expel it from the eye, or its extraction by a surgical operation. I thought it better to adopt the latter course, in order to put an end to the torture the patient was suffering, and therefore proposed it to him. At first he refused to submit to any operation, and I was consequently compelled merely to resort to palliative measures. A few days afterwards, however, on the 6th of March, 1842, he again called on me; he was suffering severely, not having slept for three days. The conjunctiva was swollen, and of an uniform red hue; the angle of the foreign body actually raised the upper eyelid, and had produced an ulceration on its internal surface. The metallic angle stood out about a line beyond the cornea, which held it encased like the setting of a gem; there was no suppuration of the cornea around it. The operation appeared likely to be much easier than on the day when the foreign body was first perceived, owing to its being so much more evident; the patient himself was anxious that it should be performed.

A small incision, less than a line in length, was made on each side of the foreign body, in order to separate it from the adjoining tissues. Although the adhesions between the foreign body and these tissues were very close, yet, by passing the narrow blade of a

bistoury between them, they were easily separated from one another; the surfaces of the metallic fragment were thus entirely denuded, and then came the most difficult period of the operation. Whenever the slightest traction was exercised on the foreign body, in order to bring it sufficiently forward to pass the bistoury behind it, the patient suffered excruciating pain, and yet it was impossible to separate the adhesions which its posterior surface had contracted with the adjacent tissues, without thus bringing it forward. In order to overcome this difficulty I exercised slight lateral pressure on the external angle, so as to make it act as a lever, and bring the posterior angle forward, and then, passing the extremity of a small pair of curved scissors behind, gradually excised the pedicle. The operation lasted five or six minutes; the latter part of it only was painful. When it was terminated the patient had a syncope, but of only two or three minutes duration. He soon recovered, and was able to return home; I told him to keep cloths, soaked in cold water, continually applied to the eye, and to send for me if the pain increased, or if any febrile symptoms supervened. Instead of increasing, however, the pain diminished about an hour after the operation, and the patient slept a great part of the night. On the 7th he scarcely suffered at all, and on the 8th returned to his work, which he has never left since. The redness and swelling of the conjunctiva had diminished as rapidly as the pain. The cavity which resulted from the extraction of the foreign body has gradually filled, and there now merely exists a slight depression corresponding to the perforation of the cornea. The eye is shrunken; the cornea is of a marbled-grey colour; the sclerotica remains natural.

The foreign body was a fragment of iron, representing exactly a regular triangular prism, two nearly equal surfaces of which formed a right angle; its length was seven lines, the width of the surface opposed to the right angle one line and a half; the total weight was one drachm and fifteen grains.

Among the many curious cases which science possesses of the sojourn of foreign bodies in the economy, there is perhaps none which can be compared to the one I have just narrated. It is difficult to say what was the precise region of the eye occupied by the metallic fragment; it is, however, certain, that it was partly situated in the vitreous humour, as the two chambers of the eye would not have been large enough to contain it. A very remarkable feature of the case is its expulsion, which partly took place without any suppuration whatever. When the operation was practised the edges of the aperture of the cornea through which the metallic angle protruded, appeared as if recently cut by a sharp instrument. There was not, either, the slightest suppuration after the operation. Were the acute pains experienced by the patient two years after the accident to be attributed to the presence of the foreign body, and if so what occasioned them? The first question may be answered affirmatively, as he had never suffered similar pains previous to the introduction of the metallic fragment into the eye; but it is more difficult to answer the second. It is, however, probable that the foreign body, as it gradually advanced from the depth of the eye to the cornea, came in contact with one of the divisions of the opthalmic branch, and that the pains experienced by the patient were the result of this contact. The correctness of this hypothesis is rendered still more probable from the circumstance that decubitus on the right side invariably gave rise to pain in the eye. Since the extraction of the foreign body decubitus on the right side has again become easy, and is now as habitual to the patient as before the accident. This case shows how difficult it is in some cases to make a correct diagnosis, and how inscrutable are sometimes the operations of nature.

ACTION OF ALCOHOL AND ETHER UPON THE SYSTEM.

In the journal of the Medical Union of Prussia (*Med. Zeitung, v. d. verein fur Heilk. in Preuss.*, 1843, No. 21), Professor Mitscherlich has an essay on the above subject, which possesses the merit of not only showing what has been ascertained, and is established as fact, but also of indicating what other points connected with the matter demand further investigation. After some comments on the various experiments undertaken by physiologists and chemists for the determining the *modus operandi* of alcohol on the organism Professor Mitscherlich sums up as follows:—The first effect of absolute alcohol and strong alcoholic liquors in the stomach is chemical; they coagulate the albumen, casein, &c. of the fluids which moisten its cavity. They next alter its epithelium in such a manner as to contract its cells perceptibly, and they probably influence, also, the calibre of the capillary vessels, though future researches are necessary upon this question. Diluted alcoholic liquors, wine, &c., do not produce such effects, but they might be expected to follow the ingestion of brandy, or other spirituous compounds, containing more than 40 per cent. of alcohol, if the latter be taken on an empty stomach, or in any considerable quantity. The mode of action exerted by alcohol upon the nervous matter in the economy is like that of other chemical agents still unascertained. Mitscherlich bears testimony to the correctness of the observations of Sir B. Brodie and Orfila, that strong alcoholic drinks cause inflammation of the mucous membrane; and he remarks that inflamma-

tion of other organs, and violent and fatal symptoms may arise in other organs by mere sympathy with the lining coat of the stomach. Magendie and Percy have proved that alcohol enters the blood.* Having penetrated the epithelium of the stomach it is partially taken up by the capillaries of the mucous membrane, but also partly transmitted beyond this to the muscular membrane,—further still to the serous coat of the digestive tube,—so that the odour of alcohol becomes distinctly perceptible on opening the cavity of the abdomen. The absorption of diluted alcohol takes place quicker than concentrated alcoholic liquors.

No researches have yet distinguished the phenomena which arise in consequence of the absorption of alcohol into the blood, and its direct influence on the heart, brain, and spinal cord, from those which are due to a sympathy of those organs with the stomach. But, in the case of the ingestion of diluted alcoholic liquors, the former class of phenomena are, undoubtedly, the most prevalent, as the general effects perceived arise in proportion to the presumed extent of absorption; while in the case of strong alcohol having been taken the phenomena apparent are due mainly to a direct sympathy of other organs in its effects on the stomach. Of the alcohol absorbed into the blood, Tiedemann has asserted (proved, says our author) that a portion is dispelled by exhalation from the lungs, while another portion, according to the researches of Percy, is discharged in the urine,† but the greater part appears to be oxidated in the lungs, and its carbon and hydrogen converted into carbonic acid and water. On this subject, however, more researches are requisite.

The action of ether on the organism differs from that of alcohol, owing, doubtless, in part, to its not having so ready an attraction for water. By long agitation with albumen (white of egg and milk) ether gives origin to a coagulated matter, the chemical quality of which has not yet been fully investigated; but the same agent does not perceptibly alter the albumen of the serum of the blood, nor dissolve gelatine, though fat and analogous substances are soluble in it. If a piece of epidermis or of mucous epithelium be placed in ether they are neither seen to be contracted nor obviously altered in any way, and the presumption is that no chemical influence is exerted by the ether on these structures when removed from the body. It would scarcely be expected, therefore, that a chemical change should result from the application of the same substances to these structures while forming a part of the living organism, and accordingly both the epidermis and the epithelium of the mucous membrane of the mouth have been found to remain unaltered in composition by any direct action of ether. But very decided physiological effects follow the contact of this substance with various textures of the frame. Ether, placed on the skin, as is well known, causes at first a sensation of coldness in proportion to the rapidity of its evaporation; gradually, this is substituted by a feeling of revivification and burning heat. Taken into the mouth this feeling supervenes much earlier, and even inflammation may ensue after the reaction, produced in a like mode to that in which it is produced by alcohol. Similar phenomena result still more quickly on the application of ether to the eye, and quickest of all when it is placed on bare nerves. In the stomach ether is promptly volatilised, expanding the organ often considerably; it penetrates, like alcohol, through all the coats of the digestive canal, being partly absorbed by the vessels in its course, and partly penetrating into the peritoneal cavity, where, in experiments on animals, it is easily recognisable by its characteristic odour. The active inflammation of the stomach and intestines which may be excited by it is closely connected with an erection of the epithelium, and tumefaction of the cells (produced, as Mitscherlich supposes, by a reaction of the organism). The phenomena of other kinds and violent character, so rapidly produced by ether in large doses, may be fairly, he thinks, considered due to a sympathetic influence, such as acts in causing the rapid effects on the nervous and other functions after the ingestion of strong alcoholic liquors.

* The researches of Liebig have confirmed this. See his views respecting the action of alcohol, as given by Mr. Ancell (LANCET, 1842-3, vol. i., p. 730).

† The former of these results, according to Liebig, can only occur when the oxygen taken into the lungs is not adequate to unite with all the carbon and hydrogen of the alcohol received into the blood; if less oxygen be inspired "than the component particles of the alcohol require for their oxidation, a case is produced in which alcohol is expired." Liebig further states (Gregory's Liebig, p. 239,) that the urine contains no trace of alcohol after indulgence in spirituous liquors. (See our first volume for 1842-3, p. 730.)

THE MARYLEBONE AND PADDINGTON HOSPITAL.

To the Editor of THE LANCET.

SIR,—As the plan for founding an hospital in the north-western quarter of the metropolis seems to be rapidly gaining ground in public favour, and there can be no doubt, considering the large amount of money already subscribed, that a charitable institution of that nature will, before long, be called into existence, I wish, through the medium of your Journal, to direct the attention of the public and of the medical profes-

sion to a question in which both are interested, viz., the manner in which the medical appointments of the intended hospital are to be made, and its future medical organisation.

All those who are aware how slight are the means of relief offered to the poor labouring under physical affliction in the part of London in which it is proposed to erect the new hospital, must feel deeply interested in the accomplishment and subsequent success of so benevolent, so praiseworthy, an undertaking. As it has been eloquently remarked by one of the most energetic supporters of the charity, on another occasion, "Although in the parishes of Paddington and Marylebone there are many rich, there are also many poor, and they, owing to the absence of suitable charities, are, in reality, worse provided for in the hour of sickness and want than their fellow-sufferers in many less wealthy districts." Under such circumstances it becomes the duty, not only of those whose sphere of activity has been thrown in the above locality, but of all who can forward, either directly or indirectly, the interests of the poor, to contribute in word and deed to the good work. Impressed with this idea, I address to you the following remarks, in the double capacity of an inhabitant of the parish of Paddington, and of one possessing peculiar information which may be brought to bear directly on the efficacy of the intended institution.

When an hospital, or asylum for the sick poor, is once fairly brought into play, its efficiency depends entirely on the physical and medical wants of its inmates being properly and conscientiously attended to. In other words, the food, clothing, warming, and attendance, must be such as to allow the medical officers full scope for the application of their knowledge of the healing art; and the medical officers themselves must be men thoroughly acquainted with their profession, energetic and conscientious. A judicious committee of management is sufficient to ensure the first desiderata, but as the medical officers are, to a great extent, from the very nature of their functions, irresponsible agents, the latter can only be ensured by the choice of men who really and truly present the necessary guarantees.

It is a fact well known to the medical profession, but of which the public in general is not cognizant, that by the present mode of appointment to medical charities the desired degree of scientific knowledge *may* be obtained, but is not in any way *ensured*. Throughout England, all, or nearly all, medical appointments are made directly by the votes of the governors of the charities; and a worse system, as far as the interests of their inmates are concerned, could scarcely be devised. The governors, not being able to appreciate the professional merits of the candidates, are obliged to judge of their comparative merits by testimonials, which every one acquainted with the manner in which they are obtained well knows to be the most fallacious of all possible tests; or are otherwise guided in their choice by the influence of friends or by private partialities. Now, when we consider that not only are the chances of recovery to the patients diminished by the choice of men of second-rate ability, but that the improvement of medicine, as a science, is impeded, the extensive field of hospital practice being an indispensable requisite to those who, by their genius and intellect, are capable of contributing to its progress, it must be obvious that if another system exists which ensures the appointments falling into the hands of the men who are the most capable of turning them to the advantage of suffering humanity, it ought to be adopted.

That such a system exists in a neighbouring country, justly famed for the high standard of its medical knowledge, that it is in full operation, and has brought forth the goodly fruits which might be expected from it, you, Sir, who have always been the sincere advocate of the CONCOURS, are well aware. I need scarcely say that France is the country to which I allude,—France, the native land of so many illustrious medical men, generated, I may say, and brought into public notice by the *concours*. Hitherto it has been impossible to bring to a fair test in this country the system of *concours*, or *of public competition of candidates before a competent professional jury*. In the older London hospitals there are so many vested rights which would fancy themselves injured by the adoption of such a measure; the existing medical officers are so averse to an innovation which would totally change the laws by which their own nominations were regulated, that there is little or no hope of their ever taking the initiative.

But the improvement which it is in vain to look for at the hands of the old constituted bodies may be easily accomplished by one which, as yet, is not even in existence, and with reference to which it cannot, consequently, be said that there are vested rights to respect or interests to spare.

The erection of an hospital at Paddington would, indeed, prove a new era in the history of medicine in Great Britain, if those through whose donations it is to be founded can be persuaded to abandon their right of nominating the medical officers to a jury of competent medical men, chosen from the heads of the profession. In France, the *concours*, which, for more than twenty years, has been the only means of arriving at medical honours, has quite revolutionised the medical world. The hospital appointments and the professorships are nearly all held by scientific, active, energetic, men, who have laboriously worked their

way to their present positions, and are *really* the first men in the profession. Their superior knowledge, practical and theoretical, has carried them victoriously through many an ordeal, through many a scientific contest, and has, at last, given them the high rank which they deservedly occupy. With such an incentive to study, the younger men also, at least those who wish to raise themselves above the herd, do not, as is too often the case with us, cease to study as soon as they have obtained their degrees, but continue zealously to add to their stock of professional lore, in order that they may be able to compete successfully for the honours which the profession can bestow. Thus both the patients at the hospital and the public in general reap the benefit of the superior degree of professional information which is generated through the means of the "*concours*."

It has often been stated as an objection to the adoption of the *concours* in England, that medical men of mature age would not risk their reputation by coming forward to contest publicly for a medical appointment. This, however, I consider a calumny on the profession. The medical men who are likely to become candidates at a new hospital are not those who, advanced in life, are at the head of the profession both with regard to reputation and to practice; to such persons the appointments would be of no value. The candidates will, no doubt, be principally middle-aged men, who, on the one hand, think they have some scientific claims to the notice of the public, and who, on the other, are anxious to acquire the means of prosecuting on, a larger scale, their medical investigations, and at the same time of acquiring an honourable distinction. Such men, assuredly, would not shrink from an opportunity of showing to their medical brethren that they really possessed the superior knowledge to which they lay claim. If they *did shrink* from the contest, I should then say that they doubted themselves and were, most probably, very unfit persons to occupy the posts to which they aspired. Again, it is said that a man who has been in practice some few years forgets the theoretical and elementary parts of his profession. But the jury, no doubt, would be composed of practical men, and, consequently, the ordeals would be of a practical as well as of a theoretical nature; and if by the word elementary is meant a knowledge of the principles of disease, I must remark that practice ought rather to increase such knowledge than to diminish it, and that a medical man who forgets his profession as he grows older, either neither knew it properly, or, not having obtained practice, has neglected the opportunities which hospitals afford to those who are so situated of *at least* keeping up the information previously acquired. I therefore think I am warranted in inferring that a medical man who declines a scientific combat on any of the above grounds is decidedly unfit to be entrusted with a responsible medical appointment.

My lengthened residence, as a medical functionary, in the Paris hospitals, has made me, I believe, thoroughly acquainted with everything connected with hospital life,—with the wants of the patients as well as with the duties of the medical officers. It is the knowledge which I have thus acquired that induces me to address to all who are likely to have any influence over the organisation of the intended hospital another remark or two, which I think deserving of their most serious attention. In most, if not in all, of the London hospitals the physicians and surgeons are only bound to see their patients three times a week. The more conscientious come to the hospital oftener, but many confine themselves to the execution of their *duties* as defined by the hospital regulations. Now this, in my opinion, is an amount of attendance which is *altogether insufficient*. An hospital surgeon or physician ought to see his patients *every day*, if he wishes to do his duty to them—to meet by his medication all the exigences of the diseases he is treating. Setting aside the indispensable necessity that a medical man should frequently witness the phenomena of disease, which are too varied to be properly appreciated by a visit made once in forty-eight hours, it is also necessary that he should see his patients every day, when he has many under his care, in order that he may become acquainted with them personally, and remember their diseases; otherwise he is obliged to ask the house-surgeons or house-physicians, at every bed, what is the nature of the case, what has been done, &c.; and when patients are thus attended to I can assert, from long experience, that they are most inefficiently treated.

It will be said, on the other hand, that such an obligation would encroach too much on the time of the medical officers. To this objection the answer is obvious; let the appointments be entrusted to none who cannot afford to devote an hour or two daily to their hospital duties. By the same rule that French medical men, even those who have the largest private practices, can find time to give a couple of hours daily to their hospital patients, so would English, *if they were obliged*, and the welfare of the patients renders it an imperative duty on the governors, as philanthropists, to enforce such an obligation on those who are appointed. I may add that the obligation would cease to be onerous if the governors also rendered it obligatory, on the part of the medical officers, as I trust they will, to pay their visits to the hospital in the morning, before nine or ten o'clock. Such a regulation would ensure punctuality, which is next to an impossibility when a physician or sur-

geon, who has any private practice to attend to, undertakes to be at his hospital in the middle of the day, at one or two o'clock. Moreover, as the visit would, in such a case, be made before the business of the day can be said to have commenced, the medical officers would not, as is now often the case, grudge the time they devote to their patients, and rapidly perambulate the wards, giving a cursory glance at the patients under their care, and trusting to the apothecary or house-surgeon for more careful examination.

The three points to which I have called your attention,—the nomination of the medical functionaries by *concours*, their daily attendance, and their attendance early in the morning, constitute the principal difference between French and English hospitals, and account for the superior usefulness, which in my opinion is incontestible, of the former. If the subscribers to the intended hospital, both medical and non-medical, will bear in mind and adopt these suggestions, I am convinced that they will render the charity infinitely more efficacious as regards those whose sufferings it is destined to relieve, and, at the same time, confer a lasting benefit on the medical profession, on the one hand, and on the public on the other. I have the honour to be, Sir, your obedient servant,

HENRY BENNET, M.D.,
Four years resident House-Physician (*by concours*) to the Hospitals of Saint Louis, La Salpetrière, and La Pitié, Paris.
Cambridge-square, Hyde-park,
Feb. 17, 1844.

MEDICAL REMUNERATION IN EMIGRANT VESSELS.

To the Editor of THE LANCET.

SIR,—For the benefit of many of the junior members of the profession who, on having completed their course of education in London, are frequently induced to adopt any honourable source of employment, and among which that of the surgeoncy of a merchant or emigrant vessel is frequently the one selected (many of which advertise to carry their "skilful and experienced surgeons"), the following extracts from an article which appeared in the "Colonial Magazine" of December last, cannot be too widely disseminated for a just appreciation of the merits of the latter duty, ere entered upon by those more *inexperienced*.

"As the discipline of an emigrant vessel cannot be coercive, the requisite regulations to ensure health and comfort are more difficult to enforce than even in a convict ship. And few, if any, indeed, properly qualified, would enter upon the service twice under the present wretched scale of remuneration, who had experienced the delay in the colonies before even that was fully discharged, from their frequently having charge of ineligible parties. The attendant port expenses, and there being no provision for a return passage, reduces also the remuneration of the *bounty system* of 10s 6d, now 10s, per head, to nothing more (notwithstanding the hazard) than an 'assistant's emolument,' shown as follows:—

200 emigrants (and that, if anything, exceeds the average number, although some few vessels have taken 300 and upwards) at 10s 6d....		£105
Expenses in harbour for six weeks (and where there are ineligible emigrants full that time will be expended in investigating whether the surgeon was ignorant of their being so on embarking), in correspondence, &c.; and an average of 2*l.* per week all who have visited the colony can attest will not be more, in the towns, than sufficient to supply actual necessaries	£12	
Additional outfit for the voyages, out and home, to the apparel that may be considered requisite if otherwise employed, at but the small sum of	20	
And the homeward passage money, to do duty as surgeon, at the average (which, if anything, is under the mark) of 40*l.*; and saying such is obtainable in the period of six weeks, what is the balance of the bounty, after the hazard and anxiety attending such an undertaking.....	40	72
Balance		£33!

Thus, a twelvemonth's hazardous employment, and it is known by experience that the outward and homeward passage to the colonies generally exceeds eleven, leaves but a paltry 33*l.*,—all the surgeon can with any certainty calculate upon.

It is generally suggested by the ship-agents and others that after the disembarkation of the emigrants in Australia, vessels may be found, proceeding *via* India to England, in which the services of a medical man will be adequately remunerated; *but let not such fables be believed;* the shipping interest of the colonies, especially at the present time, will not allow of it, and the chances that he may not, and will not, are at least forty-nine to fifty against it.

The conviction of the truth of these remarks has prompted your correspondent to offer them for circulation through the medium of your valuable Journal, in order that

the unwary and inexperienced may not be imposed upon, and that the duty devolving upon the surgeon superintendent of an emigrant vessel may meet with a better requital, and thus become more worthy of the attention of those who are alone qualified for such a duty, and of whom the remuneration of the present system is unworthy of notice. I remain, Sir, your obedient servant,

T. CHURCHILL, Surgeon.

London, Feb. 5, 1844.

THE LANCET.

London, Saturday, February 24, 1844.

AN OPEN MEETING of the COMMITTEE of the MEDICAL PROFESSION was held at the CROWN-AND-ANCHOR TAVERN, Strand, on Wednesday evening last. There were upwards of a hundred gentlemen present, of first-rate respectability, many of them far advanced in years, and whose venerable appearance added to the interesting character and dignity of the scene. An address to the profession, written by Dr. LYNCH, was read, and received the hearty approval of the committee. It was referred to a sub-committee, and from that body it is to be transferred, for further consideration and approval, to an aggregate meeting of the profession, which is to be held in London, in the month of MARCH next. The committee is fully empowered to make the necessary arrangements for the accomplishment of that important object. The committee propose, at the meeting in question, to present a brief report of their labours, and to recommend the united action of the whole profession in a general assembly, and then to resign their powers to that assembly, considering that the labour of medical reform, in order to be successfully pursued, must be undertaken by the entire profession, and not by a single committee of its members, for whose limited numbers the task would be by far too Herculean to be conducted with even the hope of a successful issue. The committee has determined most wisely; and we are confident that the general voice of the profession will be loudly and ardently expressed in favour of the discreet course which the members of that body have determined to pursue. A report of the proceedings, developing the proposed plan for future operations, will be published in the ensuing number of our Journal. We regret that a misconception on the part of our reporter has prevented the insertion of an account of the proceedings in THE LANCET of the present week.

AMONG the numerous charities which modern philanthropy is endeavouring to establish in our great metropolis, there is none which is more deserving of effectual support, and none which, we are happy to say, is more likely to obtain it, than the intended Marylebone and Paddington Hospital. The want of hospital accommodation for the relief of the industrious poor who shrink from the humiliation entailed upon them by a residence in a workhouse infirmary, is felt severely, even in those parishes which are the most munificently endowed in that respect; what must it then be in the district of London to the north-west of Portland-place, where, with a population of 150,000 inhabitants, occupying an area of four square miles, the only institution affording indoor relief, with the exception of the Marylebone Workhouse Infirmary, is the Western Dispensary, which has but *six beds* to dispose of.

At a general meeting of the subscribers to the proposed charity, which took place on the 14th instant, and of which we last week gave an account, a report was read, from which it appears that the prospects of the Paddington Hospital are now so good that its early erection may be looked upon as a matter of certainty. The funds already subscribed amount to above eight thousand pounds, comprising a munificent sum of two thousand which has been lately presented by an anonymous benefactor. This donation has been made subject to the condition that the building of the hospital will be commenced within a twelvemonth. At present the committee is bound by a motion, passed

last year, not to commence the erection of the hospital until 15,000*l*, has been subscribed, but at the late meeting it was very properly decided that a site for the intended hospital should be forthwith purchased, in order to give stability to the undertaking in the eyes of the public. It was also announced, although not officially, that if, by the close of the year, the above-named sum was not raised, the committee would call a general meeting of the subscribers to rescind the clause passed last year, and to enable them to commence building with whatever amount they might have in hand.

The subscribers present at the late meeting appeared fully to concur with the committee in considering such a step authorised by the present position of the undertaking, and should the 15,000*l*. not be raised by the epoch specified, there is no doubt but that the committee will receive from them full power to commence at once active operations. The amount already subscribed is much more than is sufficient to erect and furnish a hospital; and we fully believe, with several of the speakers at the late meeting, that when once the building is erected the inhabitants of so large and so opulent a district as that in which it is to be situated, will never allow it to remain empty for want of a sufficient income. Our readers will be able, indeed, to form an estimate of the great wealth and resources of this district when we state that a rate of 2*d*. in the pound produces 4000*l*, and that the poor-rate of Paddington parish is lower than that of any other in the metropolis.

The speedy erection of the hospital being thus, we may say, a matter of certainty, we think no time should be lost in urging on the committee and subscribers the adoption of the *concours* as the mode of nominating to the medical appointments of the hospital, according to the suggestion of Dr. Henry Bennet, whose letter on this subject will be found in another part of the Journal. If it were once publicly declared that *all* the medical appointments will be given to the most deserving, and that a *concours*, open to all, will be made the test of their abilities, the intended charity might calculate on the sincere co-operation of the great mass of the medical profession in this metropolis. It would cease to be looked upon as merely a local charity, and become at once, in the eyes of the public, an institution destined to carry into execution a plan which must be considered, by all impartial persons, as one of the brightest emanations of the human intellect. The medical profession in general is well aware that we are strenuous friends to the *concours*. We abominate the system which brings a professional man in the presence of hundreds of persons, whom he knows not and who know him not, to sue for assistance and protection whenever he is a candidate for a medical appointment, to which superior knowledge, and that alone, ought to lead—a system which bestows the honours of the profession not on the most enlightened, but on those who have lived longest in a neighbourhood, who possess the greatest collateral influence, or who are the most active in their canvass. We cannot say that we look forward to the day when our hospital physicians and surgeons will all gain their offices, as in France, by superiority of practical knowledge, as demonstrated by public competition with opponents matured by study and experience, for such a hope would be vain; but we think it very probable that were the principle once fairly tried in a large London hospital, it would soon be followed by such results as would ensure its being, in the course of time, extensively adopted. We trust, therefore, that all those of our professional brethren who possess any influence in the north-western part of London will unite with our correspondent, and endeavour, by their influence over the subscribers, to efficiently introduce the principle of the concours into the laws of the Marylebone and Paddington Hospital; indeed, to make it the prominent feature in its medical organisation.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Tuesday, February 13, 1844.

BRANSBY B. COOPER, Esq., Vice-President, in the Chair.

Case of extensive Carcinoma of the Lungs, with some Practical Remarks. By GEORGE BURROWS, Esq., M.D., Physician to St. Bartholomew's Hospital.

THE author adverts to two conditions in which carcinoma is found in the lungs, either as a primary or secondary affection. In the latter it gives rise to few pulmonary symptoms, and produces but little change in the pulmonary tissues. Primary cancer of the lungs, on the other hand, is a most serious disease. Very large portions of a lung become infiltrated with this morbid deposit, and this is often combined with mediastinal tumours of a similar character. The symptoms which attend on these formations are most distressing and perplexing; they partly arise from the gradual consolidation of the lung, and partly from pressure on the respiratory tubes and blood-vessels at the root of the lung.

CASE.—A married woman, aged 20, was admitted into St. Bartholomew's Hospital, on the 22d of April, 1843, giving the following history of her complaints:—She had been healthy until six months ago, when she was attacked with pain beneath the sternum, cough, and expectoration. She was delivered of her first child about three months since, after which dyspnœa and cough increased, with some swelling of the cervical glands. From this time her health declined, and a month before her admittance, she was attacked with hæmoptysis. On admittance, her face was pallid and bloated, with rather livid lips; respiration 40, with much dilatation of the nostrils; pulse 132, small; decubitus on the back inclining to the right side. She complained of pain beneath the sternum; distressing paroxysms of cough, leaving her breathless and panting; expectoration scanty, the sputa bloody, resembling red currant juice; the cervical glands on the right side swollen, hard, and tender, with enlarged veins passing over them, the external jugular vein much distended. Upon auscultation and percussion the left lung appeared to be healthy. On the right side, there was a feeble respiratory murmur in the upper third; in the two lower thirds there was a varying amount of bronchial breathing; the expiration prolonged, accompanied by a modification of sibilus, resembling a chirp. On percussion the sound was extremely dull all over the lower two-thirds of the right lung. The voice was so weak and husky that no vocal phenomena could be discovered. The heart's sounds were natural, and not transmitted beyond the cardiac region.

The physical symptoms, in some respects, indicated consolidation of the larger part of the right lung, while in others they were those of pleuritic effusion. This latter supposition was supported by the measurement of the chest, which gave an excess of an inch and a half to the right side, over the left, as well as the constant posture of the patient on her right side. The author ventured to form the diagnosis of malignant disease of the right lung, partly founding that opinion on the physical signs which did not correspond with any of the ordinary forms of thoracic disease, and partly on the history of the complaint. A few days after this examination the cervical glands increased much in size, occasioning additional suffering by pressure on the trachea. The face, throat, right arm, and mamma became very unasarcous; the dyspnœa, cough, and peculiar bloody expectoration continued, the posture was almost entirely on the right side, and the physical signs of pleuritic effusion more decided.

It now became a question whether paracentesis thoracis ought not to be performed to relieve her suffocating dyspnœa; the operation was not considered right, as the author still adhered to the opinion of extensive malignant formations in the right lung. Without further change of symptoms the woman expired at the end of a fortnight. The body was examined nine hours after death. The heart and left lung were found healthy; the right pleura contained about four pounds of brown-coloured serum; the lung had not collapsed, but stood out, projecting into the cavity of the pleura; the upper lobe was not much altered; the middle and lower lobes felt quite solid; a white lobulated tumour, something like a mass of suet, projected from the middle lobe. Towards the root of the lung was another dull-white tumour, which had thrust the lung up from the spinal column. The substance of the middle lobe appeared to be continuous with these tumours; the pleura covering the lower lobe was dark-coloured, with numerous enlarged blood-vessels ramifying on the surface. Upon making section of the middle lobe and tumours their substance was of a uniform dull-white colour, and rather soft; in some points there were a few minute vessels; the surfaces yielded, on compression, a white creamy fluid in considerable quantity. The superficial parts of the lower lobe were converted into a dark-brownish friable substance, studded with streaks and patches of white matter. Portions of the carcinomatous substance had also made their way into the right bronchus and the right pulmonary vein. In the upper part of the anterior mediastinum there was another carcinomatous tumour, and upon making section of the enlarged cervical glands they presented similar changes. All the abdominal and pelvic viscera were ex-

amined and found free from carcinoma. The author then proceeds to give an account of our knowledge of carcinoma in the lungs, referring to the works of Laennec, Andral, Stokes, Sims, and Walshe, and points out the rapidity with which the diagnosis of this disease had improved. The paper is concluded by the following statement:—"That when a patient has long been suffering from severe affection of the respiratory organs, with physical signs offering close analysis to those of consolidation of the lung, or of copious pleuritic effusion, and presenting anomalies not compatible with either of those morbid conditions; and when the history of the case does not accord with that of tubercular infiltration of the lung, nor of chronic pneumonia nor pleurisy, malignant disease should be suspected. In addition, if the countenance becomes bloated, the eyeballs prominent, the throat swollen, with œdema of the arm on the affected side, enlargement of the superficial, cervical, and thoracic veins, dysphagia, with enlarged glands, or other tumours, on the surface of the body, and the cough be accompanied with currant-juice sputa, the diagnosis of malignant disease of the lung may be considered complete."

Mr. Lloyd detailed some particulars of a case of malignant disease affecting the uterus, rectum, and œsophagus. It was first noticed in the rectum, round which abscesses formed. Some short time afterwards the patient became affected with cough and difficulty of breathing, the cough being accompanied with blood and frothy expectoration, which subsequently became thin, and very offensive, so offensive, indeed, that the room was disagreeable to enter. She died, and on examination carcinomatous disease was found in the rectum and œsophagus, that in the former organ containing a number of cells filled with a substance like black currant-jelly. In the lungs there was found a very large cavity, traversed by vessels and bronchial tubes, and containing a quantity of black matter mixed with blood and tubercles; there was purulent matter, also, streaming down the sides of the cavity. Several tumours, of a fungoid character, were found situated in various parts of the body.

Mr. B. Cooper remarked, that the case just related was one of secondary malignant disease of the lung, and in this respect differed from the case detailed in the paper, which was one of malignant disease, primarily affecting the lung.

Dr. Burrows remarked, that that circumstance constituted the interest of his case, for secondary malignant disease of the lung was by no means so rare.

Dr. C. J. B. Williams inquired, if in Dr. Burrows's case, there had been, in the early stages, an unusual degree of breathlessness or spasmodic dyspnœa.

Dr. Burrows replied that the patient had come under his care only during the last fifteen days of her life. During the time she was in the hospital the breathing was often distressing, short, hurried, and asthmatic, particularly after a violent fit of spasmodic coughing.

Dr. C. J. B. Williams had observed, in several cases of malignant disease of the lungs, that this peculiarly spasmodic character of the breathing was one of the most prominent symptoms, and, indeed, was less observant in any other disease, with the exception of spasmodic asthma and aneurysm of the aorta or innominata. Seven or eight cases of primary malignant disease of the lungs had come under his notice, and in all of these there was dyspnœa in the early stages, a dyspnœa tending to be spasmodic or to amount to a state of breathlessness on making the slightest exertion. This symptom was, perhaps, more prominent than any other as the disease advanced. This peculiar symptom, he believed, to be dependent, first, on an alteration of the quality of the circulating fluid itself, which in cancer we knew to be deteriorated; and, secondly, upon the influence exerted by the local disease itself. He considered the society indebted to Dr. Burrows for the interesting case he had brought forward, for every instance of the disease might afford its assistance in our diagnosis. He (Dr. Williams), however, thought, as a general rule, that the diagnosis of malignant disease of the lung was sufficiently clear, and that there were peculiarities in it which would render it easily distinguishable from any other chest affection. Thus, for instance, it must be recollected that malignant disease had a tendency to growth; it was not a simple consolidation, a deposit, nor an effusion into the tubes, but a mixture of both. This growth produced obstruction and other symptoms, which were not to be found in other changes of the lung, such as the dyspnœa previously alluded to, which often amounted to spasm. In two of the cases he had seen this difficulty of breathing was attributable to the fact of the recurrent nerve being involved in the disease; the dyspnœa came on suddenly, and subsided as suddenly, the breathing being almost completely stopped during the paroxysm. In this respect it resembled an attack of laryngismus stridulus. As the disease proceeded in its course the veins generally became obstructed, and hæmoptysis was the result, the bronchitic expectoration being mixed with blood, or in some cases resembling red currant-jelly. As the tumour increased in size it caused obstruction of the circulation through the veins of the neck. Out of the six or seven cases he had seen, the right lung was the seat of the disease, which produced more or less obstruction of the vena innominata, and swelling and œdema

of that side of the neck. The presence of the tumour was often rendered demonstrative by these effects, and by its displacement of the walls of the chest, which it pressed distinctly forwards; or it might even encroach upon the superior wall of that cavity, as he had found it in one instance, above the clavicle. The implication of the glands of the neck and the axilla, as in the case under discussion, would also be serviceable in leading us to arrive at a right conclusion respecting the nature of the case. The progress of the disease was evidenced by the consolidation of the lung, which had not the usual characteristics of consolidation from other causes, for whilst, in the latter, the tracheal sounds were louder than usual, and there was an unusual resonance and tubular sound at the affected portion of the lungs, in the former, from pressure on the principal branches of the bronchial tube, scarcely any sound could be heard, or, at most, there was but a slight breath-sound, or a sonorous rhonchus at the root of the lung. In two cases this consolidation had produced a distinct projecting tumour at the upper part of the chest, pulseless and dull on percussion. As the tumour progressed it commonly caused effusion into the pleura, by exciting pressure on the pulmonary vessels; but what was curious, with the usual symptoms of this state of effusion we often found signs of perfect consolidation of the upper part of the lung, in the absence of all usual tubular phenomena found in cases of extensive effusion. In a case which he had attended with Mr. Avery, the usual signs of effusion were found in the lower part of the chest, whilst the upper portion was consolidated. The peculiar spasmodic breathing previously alluded to was very marked. These symptoms, together with the presence of enlarged glands in the neck, led him to believe that the disease of the lung was malignant. Dissection proved this opinion to be correct. In another instance there was bulging out of the walls of the chest, from effusion at a little distance above its lower portion, which was normal. On examination after death, this was explained by the discovery of an adhesion existing between the pleura pulmonalis and costalis, rendered still thicker by a carcinomatous deposit, and which did not give way from the pressure of the fluid above. On one occasion, he was consulted in a case which had been considered to be spasmodic asthma, from that peculiar condition of the breathing which was one marked symptom of malignant disease; hydro-thorax, with consolidation of the upper portion of the lung, were present, and subsequently general dropsy; malignant disease was suspected. After death, a mass of scirrhous disease was found encircling the vessels at the root of the lung. Such were the chief marks by which our diagnosis of primary malignant disease of the lungs might be formed When this affection was of a secondary character, none of these signs might be present, and the patient might sink from exhaustion, from the effects of the complaint on other organs, without the existence of the lung disease being suspected. In answer to a question respecting the spasmodic breathing, Dr. WILLIAMS replied that in most of his cases the right bronchus only was compressed, but he recollected one case in which both bronchi were included in the diseased mass.

Some desultory conversation followed between the PRESIDENT and Drs. BURROWS and WILLIAMS respecting the sufficiency of the physical signs to determine the nature of cases of malignant disease of the lungs. Could these signs be trusted to alone?

To this it was answered, that these signs alone were generally sufficient to determine the character of the affection, but, of course, all constitutional signs and symptoms which were presented would be taken in evidence —such, for instance, as a cancerous diathesis—the presence of malignant disease in other parts of the body. These, however, might be absent, in some cases entirely, particularly in the early stages, and in young persons, and then the physical signs would be found sufficient for our purpose.

Dr. G. BURROWS had brought this case before the society in order to obtain the experience of members in similar cases. The detail of symptoms of particular cases would enable them to form a more accurate diagnosis. He detailed a case of malignant disease of the lung, which was considered, by one party consulted, to be simple consolidation, and by another, and the greater number, to be effusion into the cavity of the pleura. Paracentesis was performed, and a little blood only flowed. The patient died, and the lung was found affected with malignant disease.

Mr. PRESCOTT HEWETT briefly related the two following cases of malignant disease of the lungs, one of which had many points of resemblance with that related by the author of the paper. A man, aged 38, was admitted into St. George's Hospital, with a chronic affection of the chest, which, at first, presented very much the aspect of chronic pleurisy, with extensive effusion into the pleuræ. The symptoms were very obscure, but the nature of the case, some short time after the man's admission, was made manifest by the appearance of some large soft tumours in the lower intercostal spaces. These tumours evidently came from within; they increased in size, and ultimately made their way immediately underneath the skin. The patient died a month after his admission into the hospital. At the after-death examination large masses of encephaloid disease were found completely surrounding the root of the left lung; the morbid deposit had made its way both into the mediastinum

and into the substance of the lung, the greater part of which was quite solid, and adherent to the walls of the chest; from the lung the disease had spread through the intercostal spaces, had destroyed the muscles, and was lying immediately in contact with the subcutaneous cellular tissue. There were also several large encephaloid tubercles both in the liver and in the spleen. There were no enlarged glands either in the neck or axilla. The other case was that of a woman, aged 40, who was admitted into St. George's Hospital, with most urgent dyspnœa, resembling asthma, but not of a spasmodic character. She died two days after her admission. The urgency of her symptoms did not admit of any minute examination or account of her history. Both lungs were studded with deposits of colloid cancer, which was, for the greater part, situated round the bronchial tubes, following their minutest ramifications; this deposit did not exceed, even around the largest bronchial tubes, two lines in depth. A few of the bronchial glands were enlarged, and affected in the same way. The pyloric extremity of the stomach and the glands were similarly affected. The preparation had been exhibited to Dr. Hodgkin and Professor Rocitanski, of Vienna, neither of whom had before seen a specimen of colloid cancer of the lung.

Mr. B. Cooper thought these cases could scarcely be considered instances of primary malignant disease of the lungs, as in one case the disease commenced in the mediastinum, and, in the other, it had its origin in the bronchial glands.

Drs. Williams and Burrows, and Mr. Hewett, would regard the disease as primary, whether it originated in the mediastinum, the bronchial glands, or the root of the lungs.

Mr. Wilkinson King was of opinion that the diagnosis of malignant disease, when confined to the lung, is still a matter of extreme uncertainty.* He had known experienced and approved auscultators prescribe paracentesis in such a case. He regretted that no idea seemed to be entertained by those who had spoken before him, of discriminating between the cases in which lung, bronchus, and trachea were severally and distinctly involved. The attendant dyspnœa should, doubtless, be referred, in general, to the proportionate obstruction of air tube or compressed lung. The asthmatic or spasmodic paroxysms—the *variable* dyspnœa, he imputed chiefly to injection of the bronchial lining, regulated by repletion, catarrh, posture, abstinence, &c. He had been accustomed to think of cancer in the system as one cure for asthma. Wasting of the body, with the abstraction of the severer causes of catarrhal relapse, seem calculated to diminish pulmonary obstruction, and he had known, more than once, of old winter coughs, dilated air-cells, and bronchial tubes, long reduced to very quiescent conditions by the protracted effects of cancer (whether open or not) in distant parts.

Mr. Stidolph exhibited a machine to enable blind persons, and those with a tremulous hand, to write. It attracted much attention.

On the Effect of Water-drinking in the Cure of Gout. By John Bostock, M.D., F.R.S.

We have lately heard so much, not only of the moral but of the physical effects of water-drinking, as practised, either on the more moderate scale of the disciples of Father Matthew, or in the more profuse ingurgitations of the hydropathists, that I have conceived it may not be altogether uninteresting to the Medico-Chirurgical Society to have an account of a few observations which I have had an opportunity of making on these two processes.

The first case to which I intend to direct the attention of the society is that of a gentleman, of seventy years of age, who had been, from an early period of his life, subject to very frequent attacks of the gout, the predisposition to which complaint he inherited from his parents; connected with this he had been a constant sufferer from stomach affections of various kinds,—acidity, flatulence, heartburn, irregularity,—in short, from every one of the affections which are enumerated in Collier's well-known definition of dyspepsia. His mode of life was regular and moderately active, his diet what might be called temperate, although not abstemious. He had, indeed, been advised by his medical friends, to take wine in a moderate quantity; he had occasionally employed ale, porter, and brandy and water, but never in what could be considered an excessive quantity. In this way he had passed about forty years, seldom actually confined by indisposition, but almost always subjected to a succession of ailments, which rendered it necessary to have recourse to medicines of various kinds, and more especially to alkalies, which were taken in large quantities, and, as the symptoms seemed to indicate, to purgatives or sedatives, and to a variety of tonics and stimulants. During

* Affections of axillary glands cannot indicate more than affection of pleura costalis. Tumour behind the clavis is a distinct case, as well as partial venous obstruction. These are most significant when apart from *lung* disease. The signs of lung-cancer, as of any disease confined within a part of the cavity of the chest, may be seemingly corroborated by a good guess, but who ventures to say that he can severally discern hydatid and limited empyema, and abscess and fungus in the centre of one lung?

this time the renal secretion was seldom in what was considered a perfectly healthy state. It was sometimes loaded with deposits, and of a high specific gravity; sometimes of a low specific gravity, limpid, and aqueous; sometimes very copious, at other times scanty; while its chemical constitution was most variable, both as to its nature and proportion of its saline contents.

About four years ago, in consequence of the accession of certain alarming symptoms, of a new description, which were supposed to require the antiphlogistic treatment, the patient was ordered by his medical attendants to reduce his system of diet, and more especially to abstain from the use of fermented liquors and distilled spirits of any description.

By this restriction, and other appropriate remedies, the threatened disease was averted. And, besides this fortunate result, the patient found his general state of health and feelings so much improved by the change of diet that the abstinence from all kinds of liquors has been strictly adhered to up to the present period. The result has been, that he has entirely lost all his dyspeptic symptoms, to which he had been subject for upwards of forty years; and what I am more particularly desirous of pointing out to the society, the renal secretion has been now, for a long period, in a perfectly healthy state; it is nearly uniform in its specific gravity, and is totally free from all the morbid deposits which were before seldom absent from it. And there is a circumstance connected with it which I conceive to be particularly deserving of attention, that although of an average specific gravity, and containing the proper proportion of urea and saline ingredients, it is uniformly increased in quantity, so that there has been now, for several months, considerably more of those substances discharged from the system than was formerly the case. It would appear, therefore, that the abstraction of the alcohol has produced a more healthy state of the digestive and secreting organs, so that the functions of the kidney are more actively and effectively performed. As a counterbalance to this improved state of the functions, the only inconvenience experienced by the patient is the frequent and urgent calls to empty the bladder; these occur during the day, at short intervals, and the night is seldom passed without two of these evacuations. To prevent this inconvenience he has for some time diminished the quantity of water as well as of liquids of all kinds generally employed in the diet; but it does not appear that this diminution has had much effect upon the amount or the quality of the fluid discharged.

At the same time that I was making these observations upon the effect of what has been called the temperance system, an opportunity occurred to me of hearing the result of a complete process of hydropathy. A gentleman of nearly the same age with the former, who, like him, inherited a gouty diathesis, and had, for many years, suffered severely from the complaint, was induced to try the effects of the new practice, and, according to the account which I received from himself, underwent the whole discipline in the most complete style. The quantity of fluid which was swallowed, could I have doubted the veracity of my informant, I should have conceived it impossible to have been received into the stomach, and to this was added the rubbings, sweatings, and other adjuncts; among which, it must be observed, were a a regulated diet, bodily exercise, fresh air, and the absence of many of those causes of disease which are the necessary attendants upon the life of a man who is either devoted to business, or who moves in the higher circles of society. The result, however, was that the patient returned from his campaign, having subdued his old enemy, the gout, and in a better state of health than he had been in for many years. He still continues to imbibe water, in large quantity, and it is not, therefore, surprising, that a large quantity of fluid should be voided. Indeed, while undergoing the complete process of hydropathization, the animal body may be regarded as a simple conduit, much resembling the well-known little figure that adorns the corner of one of the streets of Brussels. It appeared to me, as far as I was able to form an opinion, that in this case, as in the former, the specific function of the kidney was considerably increased; but I had not the means of ascertaining the fact by an absolute experiment, as in the other instance. Viewing the result of these two cases, and, more especially, comparing them with each other, we are induced to inquire what practical inferences can be deduced from them? Now, taking into account all the circumstances, I conceive there can be no doubt that a decided benefit was obtained in each case; that a disease was removed of many years standing, and which had resisted various means which had been previously applied. We may, then, inquire to what particular circumstances are the beneficial results to be more immediately referred? To the abstraction of alcohol; to the imbibition of water; or to any other remedial agents? In the first case, the abstraction of alcohol would appear to be the only circumstance that he conceived to have produced the effects. The water taken was in moderate quantity, and although other means were employed which might have had a tendency to improve the general health, they were not such as can be conceived sufficiently powerful to produce a great change in the state of the constitution. In the second case, I should conceive, that although much of the benefit obtained may be ascribed to the abstraction of the alcohol, yet, we can scarcely imagine that the pro-

digious influx of water into the stomach can be without its influence on the system. Mechanical and unscientific as the idea may appear, I confess I am disposed to attribute a considerable effect to the complete removal of all the offensive matter which had polluted the vessels, thus thoroughly rinsing them out, and leaving them in a clean state to receive a supply of more healthy fluids. Nor are we to regard the adjuncts as (some of them, at least,) without their influence, although, I must think, that many of them were carried to an empirical, and I will say, a ludicrous extent. The annals of medicine, from the earliest periods, contain accounts of the temples of health, which were under the direction of the Asclepiadæ; the sacred fountains of Greece and Italy, to which Hippocrates and Celsus sent their patients; the miraculous springs, dedicated to various saints male and female, in the middle ages, and the acknowledged cures performed in modern times by waters, of which the chief peculiarity consists in their purity; all which may be placed in the same category, and which may serve to explain, a part, at least, of the benefit derived from hydropathy.

NOTE FROM DR. GOLDING BIRD.

To the Editor of THE LANCET.

SIR,—I exceedingly regret that I should appear to have misinterpreted Dr. Copland's opinions on the pathology of croup in the debate on a case of that disease before the London Medical Society.

The impression on my mind certainly was, that Dr. Copland had regarded true croup (tracheitis albuminosa), laryngismus stridulus of Gooch, and the diptherite of M. Bretonneau, as mere modifications of one and the same disease. In alluding to the latter affection, Dr. Copland stated that he "agrees with M. Bricheteau in considering that the distinction here contended for (between diptherite and croup) is calculated more to puzzle the inexperienced than to advance our knowledge."—(Dictionary of Practical Medicine, vol. i., p. 430.) And under the article "Croup," in his laborious work, this distinguished and excellent physician notices the pathology and treatment of the following modifications of the disease:—

"First. *Croup, with predominance of acutely inflammatory symptoms* (the acutely inflammatory croup of several modern authors)."

"Secondly. *Croup, with predominance of bronchial symptoms* (cynanche trachealis humides of Rush, the mucous croup of some modern authors)."

"Thirdly. *Croup, with predominance of spasmodic and nervous symptoms* (laryngismus stridulus of Good, spasmodic croup of Wichmann, Michaelis, Double, and the acute asthma of infants of Simpson and Müller)."

I quote these definitions of the modifications of croup in justice to myself, and not with the most distant intention of detracting from the excellence of the valuable work, for the compilation of which the profession must remain deeply indebted to its talented and indefatigable author. I remain, Sir, your obedient servant,

GOLDING BIRD.

Myddelton-square, Feb. 19, 1844.

BRITISH MEDICAL JOURNALS.

WE find in the "Dublin Medical Press" of Feb. 17th the following interesting case of

FOREIGN BODY IN THE AIR-PASSAGES,

communicated by Dr. Houston:—"D. K., a healthy country girl, ætat. 16, was admitted into the City of Dublin Hospital, March 15, 1841. About a month previously, while holding a piece of stick in her mouth, she laughed suddenly at some observation made by a companion, when the stick passed backwards, and she was seized instantly with a severe fit of coughing, which lasted for upwards of an hour. She thought she had swallowed the stick, and had a feeling as if it was sticking in the upper part of the throat. Pressure there caused pain. She soon became a little hoarse, and had repeated fits of coughing, which were brought on especially by stooping or turning her body much to one side. For a week symptoms continued much in this state. At the expiration of this time the sensation of pain had ceased to be felt high up, and was now complained of as existing at the upper part of the sternum, leading her to think that the body had passed further downwards. Now, too, for the first time her expectoration was streaked with blood. Her voice, during the second week, became quite inaudible from hoarseness. By a liniment and some medicines the hoarseness was removed. A probang and an emetic satisfied her medical attendants that the foreign body was not located either in the pharynx or œsophagus.

When questioned regarding the piece of wood, she described it as having been about an inch long, very hard and black, about the thickness of a straw, and with a head flattened sideways.

Symptoms on admission into Hospital.—Voice feeble and hoarse—very hoarse on attempting to speak loud, but clear and silvery when speaking low; cough frequent, and sometimes attended with pain, as if from a pin sticking in the throat. This pain is produced also by suddenly turning the head to one side or stooping; but there is no pain on pressure anywhere in the neck. She gets fits of coughing in bed, at night, much more

distressing than those which come on in the day-time, and accompanied with a croup in inspiration. The chest clear on percussion, and equally so on both sides; the respiratory murmur scarcely audible from the loudness of tracheal sounds; however, when the breathing is easy, both mucous and sonorous râles are audible on both sides, and without an appreciable difference in degree in one side as compared with the other. Stooping, conversing, or anything that hurries the respiration, brings on paroxysms of croupy cough, during which respiration is suspended, the face flushed, the eyes suffused with tears, and the veins of the neck distended. Suffocation, then, appears imminent; and yet all this distress is at once relieved by swallowing a sup of any liquid—the mode of relief she always flies to in such emergency. The girl is healthy in every other respect, and has never had hysterical or other nervous symptoms.

May the 19th Dr. Houston performed the operation of tracheotomy; he laid bare the trachea, lifted up the forepart of that tube by means of a tenaculum, and cut out a square piece of the breadth of two rings, with a pair of strong scissors. The act did not occupy a minute of time. A violent struggle in respiration attended on this proceeding, and on the instant of its completion, a gush of frothy mucus, tinged with blood, was expectorated with force from the wound and from the mouth, but no stick presented itself in either direction. After two or three fits of coughing of this kind, the breathing became more than usually calm and free; so much so, indeed, that the patient felt assured that the offending body had been got rid of. A flexible metallic sound was introduced into the wound, and pushed thence upwards through the rima glottidis, and downwards, as far as it would go, towards the lungs, and turned and moved in different ways, so as, if possible, to detect by the touch the piece of wood; but nothing of the kind could anywhere be felt. In the course of the evening a similar examination was again made with a gum-elastic bougie, but with no better result. There was still some cough, but the fits were neither so prolonged nor so severe. It was remarked by all present that in the introduction of these instruments there was a complete absence of excitement when they were pushed forwards through the larynx, whereas violent paroxysms of coughing were produced by every attempt at pushing them in the opposite direction, and this to such a degree that had the discovery of the foreign body in the bronchial tubes rendered justifiable or necessary the introduction of a forceps for its extraction, the attempt must, from this circumstance, have failed. The wound was then simply protected by a piece of lint laid loosely on it. On the 15th day all the symptoms returned, even worse than they had been since admission into hospital—the consequence of exposure to cold. "The symptoms now are more like those of laryngitis than of inflammation of the trachea—so much so that some of the medical gentlemen in consultation feel disposed to regard the affection as one which now is, and from the first had been, one of laryngitis simply." Acting on this presumption, she had leeches applied to the throat, was mercurialised and blistered. In a week she had quite recovered.

July 25. During a fit of laughter the patient was on the instant again attacked with a paroxysm of coughing, which lasted for about half an hour, and during which the expectoration was pretty abundant, and streaked with blood.

26. No bad effects remaining from the attack of yesterday; wound quite healed.

Dr. Houston goes on to say, "August 2. Has recovered her voice, is free from cough, pain, or abnormal râles of any kind, and feels nearly as well as she was before the accident. Being myself about to leave home for a short time, and seeing no present object to be gained by detaining the girl in the hospital, I permitted her to return to the country, acquainting my friend, Dr. Nicholson, at the same time of all the circumstances of the case, and requesting of him to inform me of the issue of it. The result has been the transmission to me, by him, of the piece of wood, of which the annexed woodcut is an exact *fac simile*, and which the poor girl threw up during a fit of coughing, in which she was nearly suffocated, in about three weeks after her return to the country. It is the peg of a child's fiddle, perfect and unbroken, and corresponding accurately to the form of the stick, as described by the girl when giving an account of the accident. After the expectoration of the offending body, all pectoral distress ceased, and the girl regained her wonted health and strength."

The narration of this case was followed by some observations from Dr. Houston, and by a lengthened discussion, in which several members took part. A question, in the first instance, arose as to whether the foreign body had in reality entered the air-passages, or whether the symptoms depended simply on hysteria. The history of the case was opposed to this latter opinion, and on this point there seemed to be, subsequently, no difference of opinion. The account given by the patient was sufficiently clear, and there seemed no reason to question its truth; the subsequent symptoms, such as in most instances characterise the presence of foreign bodies in the air-passages, corresponded with the result of the case, viz., the expulsion of the offending agent and the simultaneous disappearance of all distressing

symptoms. On the other hand, it must be remembered that the symptoms were not constant, as the presence of a foreign body may be supposed to render them; neither could it be found when an examination was made. On these arguments we are not disposed to place any reliance. Almost every day's experience assures us that a foreign body may be present in the air-passages without giving rise to any very serious disturbance; and, secondly, it is not difficult to conceive that an instrument introduced into the air-passages may fail to come in contact with the object sought for. The treatment was, of course, directed to the removal of the source of the distressing symptoms, and the trachea was accordingly laid open. Professor Porter here remarks that "he could not possibly conceive a case in which there was rational evidence of a foreign body having entered the trachea in which the operation of tracheotomy should not be deemed necessary, not with the certainty of its being expelled, but merely in the hope of such an occurrence." But there is still another and a very important end accomplished by the formation of this artificial opening. The foreign body may then escape through the *rima glottidis* without endangering the patient's life by suffocation. Our readers will remember that this was well exemplified in the case of Mr. Brunel. The excision of a portion of the rings of the trachea, in the performance of the operation, is a practice which we would neither adopt nor recommend. A simple slit will generally be found sufficient for all purposes, whilst the greater contraction which follows excision often proves a source of inconvenience and distress.

In reference to the irritability of different portions of the air-passages, our readers will remark that the sound was passed upwards and brought in contact with the larynx without any very evident effects, but that if passed in the opposite direction it produced paroxysms of difficult breathing. These observations, in accordance with the experience of Professor Porter, are opposed to the experiments of Magendie and those lately recorded by Mr. Erichsen. In all these instances the larynx was the seat of extreme irritability. This subject seems to us to require further investigation.

The case is one of much interest, and the discussion which followed its narration is highly creditable to the members who took part in it.

A CASE is communicated to the "Provincial Journal," by Mr. Rose, of Swaffham, of

ALBUMINURIA COINCIDENT WITH PUERPERAL CONVULSIONS.

A female, ætat. 20, pregnant for the first time, became, at the close of the eighth month, universally anasarcous; she was delivered of a female child by an easy and natural labour. Almost immediately after "she became hysterical, crying and sobbing violently." This state terminated in frequently-recurring convulsions and partial coma. Her urine was suppressed, and some six ounces being drawn off it was found highly albuminous.

The patient was relieved by bleeding from the arm, and the use of tartar-emetic with calomel. The fact of Dr. Lever, of Guy's Hospital, having found that out of fourteen cases of puerperal convulsions thirteen were accompanied by albuminuria, leads Mr. Rose very properly to suggest the propriety of examining the urine in every case of puerperal convulsions, a recommendation, which we would extend to all cases of convulsions or of coma, where any obscurity exists as to their nature or origin.

Every day's experience affords us instances of the necessity of adopting such a practice. Attention is altogether withdrawn from the real seat of the disease, by the prominent symptoms of cerebral mischief, and time is lost in worse than useless local applications to the head, whilst on the other hand relief is often the result of judicious treatment directed towards the kidneys,—we allude to cupping on the loins and the use of diuretics.

In the last number of the "Pharmaceutical Journal" Mr. Buckle describes a form of

LEECH CONSERVATORY.

"The vessel may be made of any capacity, and of unglazed earthenware, perforated from the top to within four inches of the bottom, fitted with a lid, ground tight, and secured by two iron clamps, on the principle of Cooper's air-tight jar, which may be fastened by a padlock if required; at the bottom of it I put a quantity of smooth pebbles, about the size of a common pea, under which I frequently find the leeches concealed, and particularly in the cold weather. The vessel is then placed in a cistern, pond, or stream, the latter I consider best, if at hand, having adopted it myself with success. In this manner I have kept my leeches for more than six months, and even during the heat of last summer, I did not lose, upon an average, more than one or two per week, and in the cooler months I rarely lost one."

RHEUMATISM IN THE HORSE.

"Mr. Tessin remarks that Bouley, one of the most experienced veterinary surgeons in Paris, assures him that the ordinary course of rheumatic inflammation in the horse is the very reverse of what is usually the case in the human subject. In the latter, as all know, the affection of the joints is primary, and that of the pleura, pericardium, or other internal parts is consecutive, or secondary; whereas, in the former pleuritis is generally the primary, and arthritis the secondary, affection."—*Veterinarian*, Feb.

QUARTERLY TABLE OF MORTALITY IN DISTRICTS OF ENGLAND AND WALES.

The last quarterly table of mortality issued from the office of the Registrar-General has reached us. It embraces a return of the deaths in 114 of the districts of England and Wales, including the metropolis and the other principal cities and towns, for the (so-called) Autumn-quarter of 1843, terminating Dec. 31st. The grand total of the deaths registered within this period, in the districts chosen, was 42,263, or 1580 above the average for the five past autumns. The increased mortality was more preponderant in the metropolis than anywhere else; in the provincial districts, indeed, *in the aggregate*, the mortality was considerably below the average. In London, measles was fatal to 455 persons, and scarlatina, which continued increasing, had destroyed 706, or 163 more than in the previous quarter. Small-pox, also, had increased materially; and diarrhœa, dysentery, and cholera, were more fatal than usual, 380 persons having died of these diseases. Generally considered, the increase of mortality would seem to have prevailed most in the southern and eastern parts of the kingdom. Bedford, Cambridge, Dorchester, and Exeter, are named as places in which the mortality was considerably above the average, and in all which, except the first, it appears to have become so mainly from the greater prevalence of measles and scarlatina. On the other hand, in all the great towns specified, in the north and central districts of England, except Birmingham, Lincoln, Derby, and a few others, the mortality has been lower than the autumn average. Measles has prevailed at Brighton, scarlatina in the Isle of Wight, small-pox at Portsmouth; in the populous town of Portsea, immediately contiguous to the latter, no epidemic is said to have appeared, though the deaths there have been greatly above the average. At Windsor and St. Albans the mortality, as in the previous quarter (See LANCET, for Nov. 11, 1843, p. 188), was less than usual; in Wycombe and Great Marlow there was an increase. Typhus and scarlatina have been abundant at Devizes, and the latter disease, pneumonia, and phthisis, have caused a great increase over the average in Bath and Bristol. At Birmingham, phthisis and scarlatina contributed to swell the mortality above the average. At Dudley, the district-registrar of Tipton reports that the number of deaths was smaller in the last quarter than in any other since the Registration Act has come into operation. At Nottingham there was a comparative diminution in the deaths, most of which were caused by pneumonia and bronchitis; and at Liverpool, which had been the culminating point for disease in the previous quarter (see p. 188), the deaths, in the last, were below the average; infantile inflammation of the lungs was a prevailing source of fatality here, as in Wolverhamptom. Typhus materially raised the mortality in Bolton and Sheffield; the registrar of West Bolton remarks that it prevailed there as an epidemic most in those parts that are not densely peopled. At Bradford, convulsions proved fatal to a number of infants. At Leeds, small-pox and pneumonia were the most prevalent diseases. At Carlisle, hooping-cough and measles, and in many of the Welsh districts scarlatina, have been among the chief destroyers of human life. At Manchester the deaths were below the average; some remarks of the registrar of St. George's district in that city, which are important, are as follows:—"There have been no epidemics prevailing since October, and the district is particularly healthy; this is, perhaps, owing, in a great measure, to the improved condition of the working classes, consequent upon the revival of trade in this manufacturing district and a better supply of food, which they are enabled to obtain at the present low price of provisions. A great number have taken the teetotal pledge, and, I believe, have kept it; this, coupled with the mildness of the season, may be considered another cause of the diminished number of deaths." It is pleasant to turn from the contemplation of disease and mortality to that of circumstances capable of arresting these evils. If longevity were always implicatory of a greater enjoyment of life, the last quarterly table would seem to indicate that the inhabitants of some favoured spots at least are deserving of envy. For instance, at St. Thomas, near Exeter, the ages of six females, whose deaths were registered, were, respectively, 93, 88, 84, 78, and 72 years; in St. Buryan (Penzance district), of nine deaths, the total number registered, five were of persons aged between 74 and 83 years; and at Bisley, near Stroud, the united ages of fifteen individuals who died during the past quarter amounted to 1041 years.

Thus we have given a brief abstract of the remarks of the district-registrars, from whose returns the quarterly table has been compiled. It must always be borne in mind, however, that the number of deaths in a given period does not hold any relation to the actual public health in the same period, on which subject we purpose to make a few comments at a fitting opportunity.

ARNOLD states that certain emetics, including ipecacuanha, are apt to produce uterine hæmorrhage.

NEWS OF THE WEEK.

It is the intention of the governing body of St. Thomas's Hospital to elect two assistant-physicians.

The deaths in the metropolis for the week ending February 10th, 1844, show a decrease of 10, as compared with those of the previous week, the number being 1076 (*vice* 1086). The deaths are classed under the following heads :—

Diseases of the lungs, &c.	415—*v.* 391	
Epidemic and contagious dis...	186—*v.* 176	
Dis. of the nervous system....	165—*v.* 180	
Cancer, dropsy, and diseases of uncertain seat	97—*v.* 101	
Old age	85—*v.* 85	
Diseases of the liver, stomach, and other digestive organs ..	57—*v.* 73	
Diseases of the heart and blood-vessels	34—*v.* 34	
Violence, privation, intemperance	20—*v.* 19	
Diseases of kidneys, &c.....	6—*v.* 5	
Childbirth, diseases of uterus..	5—*v.* 12	
Rheumatism, dis. of bones, &c.	3—*v.* 4	
Diseases of the skin and cellular tissue	1—*v.* 1	
Causes not specified	2—*v.* 5	
Total.....	1076	1086

Since the foundation of the priory of Bethlehem, at Bishopgate, in 1247, by Simon Fitzmary, a sheriff of London, and the subsequent grant of that property, with all its resources, besides the oversight of the hospital of St. Christopher, to the Corporation of London by Henry VIII., in 1547, at the dissolution of religious houses, it is remarkable that no official statement regarding the administration, either of Bridewell or Bethlem Hospitals, has hitherto been presented to the governors of these truly royal charities. To the credit, however, of the present authorities, this desideratum no longer prevails, since a valuable and interesting General Report, embracing the principal proceedings, during the past year, of both of these establishments, and of the House of Occupations, was presented at the quarterly court held in January last, and is now printed for circulation among the governors. This important document is long, contains many elaborate tables, and embraces various matters respecting the management of the three establishments alluded to, and of the treatment the different inmates receive, especially those of Bethlem Hospital, which we shall, on a future occasion, more particularly examine, as that part of it appears the most interesting to medical men, and therefore deserves greater attention. In the meantime it may be stated that the Report presented to the court was drawn up by a special committee of governors, consisting of Dr. Webster, Mr. Laurie, Mr. Herring, and Mr. Baggally, although rumour states that it is actually the production of the two former-named gentlemen; but this does not signify, as it must stand on its own merits, and being now recognised by the general court, they alone are answerable for the opinions and propositions it contains.

Cure of Typhus Fever.—We are informed that Dr. Lynch, medical officer of the West London Union has perfected his plan of treatment of typhus fever by means of solutions of chloride of sodium, the outline of which appeared in our pages in the year 1838. It has been witnessed by hundreds of medical men, and has been attended with extraordinary success. We understand that Dr. Lynch is engaged in writing a short work upon the subject.

Widows and Orphans of Medical Men.—The annual dinner of the "Society for Relief of Widows and Orphans of Medical Men in London and its vicinity" took place on Tuesday last, at the Freemasons' Tavern, and was rather less numerously attended than usual. H.R.H. the Duke of Cambridge, the Patron, declined to preside this year, and the President, Sir Henry Halford, was prevented by illness. The chair was, therefore, taken by Sir Charles Mansfield Clarke, Bart., senior Vice-President. The object of this institution is to afford relief to those widows and young children of deceased members who may be left in distressed circumstances. It was founded in 1788, by a few eminent physicians, viz., Dr. Denman, father of the present Lord Denman, Dr. Dennison, Dr. Douglas, Dr. Sims, and Dr. Squire, assisted by Mr. Randall, and by Mr. Chamberlaine as Secretary. Though consisting of less than 350 members, yet, by judicious adherence to wise principles, it has afforded, since 1793, permanent yearly relief to 77 widows and 124 children, and accumulated a capital of 41,000*l.* sterling. 31 widows and 24 children were relieved last year, the sum granted to widows being from 30*l.* to 35*l.*, with a few pounds for each child. The Chairman expressed his regret that the grants were so small, but that could not be helped while the number of members was so limited and the support of the wealthy, both in and out of the profession, so shamefully withheld or so sparingly given; more good could not be done without more means, but he congratulated the society on being united together to secure even such a pittance to the family of the honest, scientific, and qualified regular practitioner, especially at a time when those who ought to know better support and encourage the most absurd and fraudulent quackery. He had no doubt, however, that the public would, in time, find out their mistake, and recognise the regular practitioner as the best friend and adviser on the long run. The Rev. Samuel Wix,

Vicar of St. Bartholomew's Hospital, Mr. Tudor, of the Stock Exchange, and several medical visitors, were present. Donations were received from the Ladies E. and S. Cornwallis, Mrs. Thwaites, the Rev. S. Wix, and Mr. Tudor, also from the Chairman, Messrs. Blagden, Chilver, Pennington, Propert, Stone, Squibb, Ware, Walne, and other members present.

APOTHECARIES' HALL, LONDON.

NAMES of gentlemen who received certificates of qualification to practise as apothecaries on Thursday, February 15, 1844:—John Nourse Morse, Gloster; Richard Allen, Preston, Lancashire.

CORRESPONDENTS.

The letter which we have received from *Dr. Smethurst*, on the death of Sir Francis Burdett, is decidedly the most temperate and the most scientific communication that has been addressed to us since we editorially noticed the merits of hydropathy. We are, therefore, sorry we cannot insert it, but by so doing we should be breaking through the determination, which we announced on commencing our remarks, not to enter into any discussion on the subject with hydropathists. If Dr. S. will carefully peruse the editorial article which we published last week, he will find that we have not underrated the merits of the cold-water regimen as a therapeutical agent. Indeed, had the merits of the cold-water system, in *certain diseases*, been brought before the notice of the profession and of the public in a candid and scientific manner, instead of its being made, as is now the case, a panacea for all diseases, some hydropathic establishments would have received the support of the medical profession, instead of meeting with unqualified disapprobation.

Another Army Surgeon.—With reference to the letter of "An Army Surgeon" (published last week, page 699), we have only to observe that if there be error in the Indian statistics quoted in the review of Mr. Raleigh's book, that error belongs exclusively to the medical authorities of Bengal, who, certainly, may not yet have arrived at correctness in such elementary data even as the numbers admitted into hospital, the nature of the diseases, and the numbers dead and cured; but if not, why, then, all we can say is that such a state of things affords another reason in corroboration of the many urgent and conclusive reasons furnished in THE LANCET, why such an administration as that of a seniority board should be discontinued. Respecting the tables quoted from Major Tulloch, it is unnecessary to remark more than that they are invaluable as illustrative of the influence of climate and of the results of treatment. It is, indeed, impossible to exaggerate the value of the labours of that gallant officer and his coadjutors. We did not know that the letter of Mr. Raleigh had been previously printed in India, in the "Medical Journal of Calcutta."

Inquirer.—The attacks on the interests of the profession in that infamous journal are now explained. That pretended *medical* journal is the property,—or, at least, it would be if it were worth a farthing,—of a *lawyer*.

In order to be able to answer the queries of our correspondent with respect to the Sydenham Society we have applied to the fountain head, and have obtained the following information:—The delay which has occurred in the publication of the promised works has been unavoidable, and is to be attributed to the difficulty of setting in motion the mechanism of the society. It is stated that in future no similar delay can occur, as a supply of works sufficient for, at least, two years, will always be in hand. The following works are at the binders:—The Latin edition of Sydenham, Hecker's "Epidemics of the Middle Ages." The second edition of Louis, on Phthisis, is in the press, and several valuable works are preparing for publication.

Mr. Richards (Lambeth).—The date of the occurrence referred to was January, 1834. The exposure and denouncement of Healey are complete. The only man of ability who wrote in his journal was "Probe," and that gentleman has authorised us to state that Healey will never again receive a line from him for publication.

M.D.—The College of Physicians has not the power to which our correspondent refers. In answer to the second question we reply that the "extra licence" does not. An answer in the negative must be returned to the third question.

The bold and manly letter of *Mr. H. H. Rugg* reached us too late for insertion.

Senex.—The ground of objection no longer exists. Healey will not again gain admission as a member of the committee.

The paper of *Dr. Bedingfield* will be inserted. The letters of *A Member of a Medical Reform Council* and *Cosmopolis* have been received.

Medicus.—We are not acquainted with any practitioner or student who would be likely to join our correspondent; he had better try to find an associate among the medical men living in his own immediate neighbourhood.

The case of *Mr. Judd* and the letter of *Dr. Styres* will be inserted in an early number.

The article alluded to by *Mr. G. Weanne* will be found in THE LANCET of the 29th of April, 1843.

Communications have been received from *Mr. Shephard, Dr. Salter Livesay, Mr. M. O Shea, A Member of R.C.S., Medicus*, and *W. R.*